

NOV 13 1922

# Railway Age

SECOND HALF OF 1922—No. 20 NEW YORK—NOVEMBER 11, 1922—CHICAGO

SIXTY-SEVENTH YEAR



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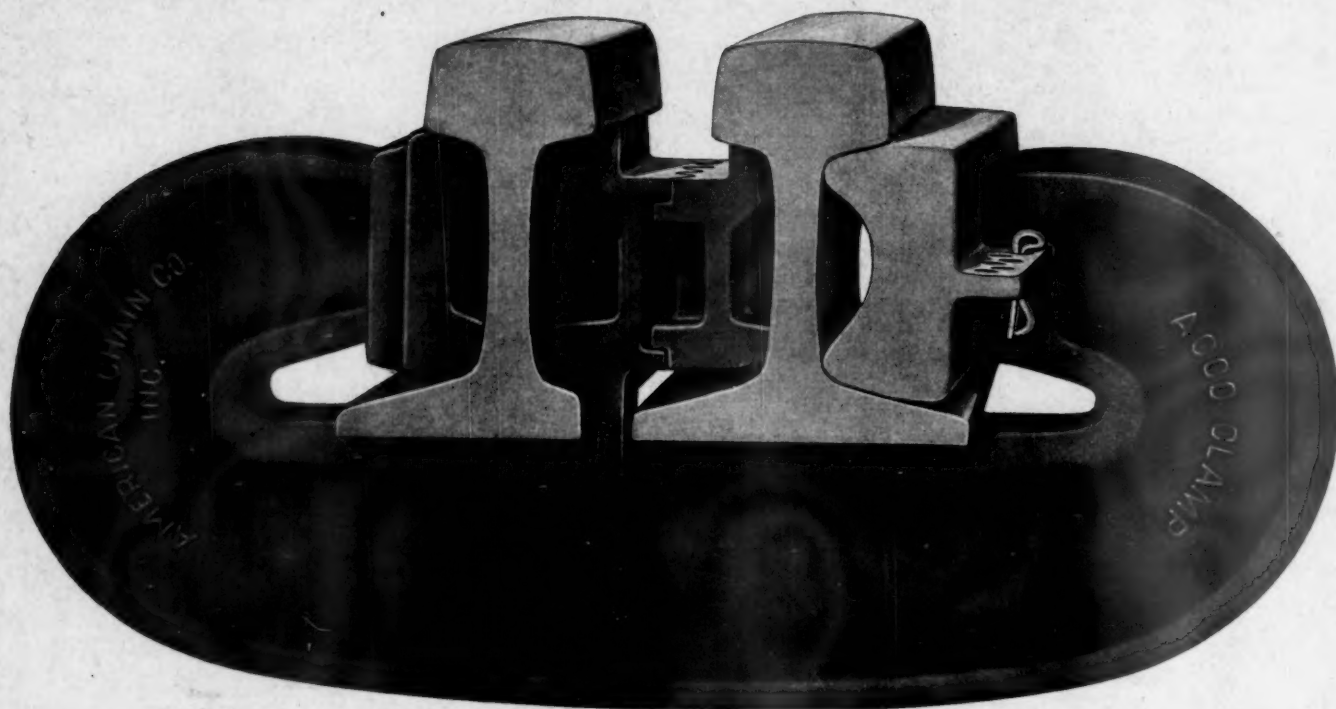
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CHICAGO

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# EDITORIAL



## Railway Age

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### What Will the Mechanical Section Do?

*[Editor's Note—The following editorial was written and in type when news was received that the General Committee of the Mechanical Section had decided this week not to hold a convention next year, although a business meeting will be held. This decision does not in the least alter the facts as to what kind of convention OUGHT to be held next year, and therefore the editorial is published exactly as originally written. We shall publish further discussion of the situation presented in later issues.]*

IT IS FIVE MONTHS since the last convention of the Mechanical Section of the American Railway Association was held. Almost ever since then the mechanical department officers have been engaged in fighting the shop employees' strike or trying to remedy its effects. Therefore, little progress has been made in doing the preliminary work of making the program and preparing the reports for the 1923 convention.

It is not too late, and it certainly is not too early, to emphasize that the convention next year can and should be made the most important and constructive in the history of the mechanical associations. Whether this will be done, however, will depend on whether the mechanical department officers, with the assent and encouragement of their executives, take advantage of the opportunities and live up to the demands of the situation which exists now and will exist for months to come. If the papers, reports and discussions at the next convention are not extraordinarily valuable and constructive it will be because they will fail to deal with the subjects with which they ought to deal, and with the frankness, intelligence and courage with which they ought to deal with them.

The year 1922 has thus far been one of the most important in the history of American railroads, and especially of the mechanical departments. A number of locomotives of new and remarkable design and construction have been put into service. The policy of running locomotives over more than one division without turning them, in order to increase the useful service of locomotives, has been tried on several railways and within the months immediately ahead will be tried on many more. The railways have gone through the first nation-wide strike in their history, and it has been a strike in the shops. When this strike began there was an almost unprecedented amount of bad order equipment, and the strike rendered it impossible for months materially to improve this condition. Some railways have settled the strike, but many more have not, and in spite of this the railways are now handling almost as large a volume of freight as they ever did in history. Cold and stormy weather

will come within a few weeks, finding many locomotives in bad condition, and the mechanical departments during the winter will be put to one of the severest tests they have ever known.

We are mentioning these things because they suggest the most important subjects with which next year's convention should deal. What does—or ought—the Mechanical Section exist for? Obviously, to help promote economy and efficiency in railroad operation. How can it best do this? By serving as a clearing house for the experience and ideas of those who are especially charged with responsibility for the design, maintenance and operation of locomotives and cars. These men have technical questions, and they also have human problems. The two kinds of problems are interlocked. Neither kind can be solved unless the other is solved. A railway may buy the best designed and constructed locomotive ever turned out, but unless it is repaired, maintained and operated by men who do their work skillfully it may get very little better results for the company than would a poorer locomotive.

What has been the experience of mechanical department officers with the locomotives of new and even novel types which recently have been put in service? What are the arguments for running locomotives over more than one division, what new problems does this practice give the mechanical departments, and how may they best be solved? What new methods have been used to expedite reduction of the amount of bad order equipment, and what have been the results? Why did most of the shop employees, and even the foremen, on some roads strike, while on others only part of them struck, and what lessons does the experience teach? How have the roads that settled with the labor unions got along, as compared with those that have not, and why? What methods have been and are being used to train the big army of new employees that many roads have in their shops as a result of the strike? What improvements in shop equipment does the necessity of recruiting and training this army of new men suggest are needed? The railways for months com-

plained loudly about the working rules of the national agreements with the shop crafts. What changes have been made in these rules on railways which have not settled with the shop crafts and what have been the results? What have these railways done to increase efficiency not only by changing working rules, but also by effecting more intelligent differentiation between the pay of unskilled and skilled employees, and what have been the results? What new methods for dealing with employees have been adopted and with what results? These are the kind of questions which ought to be considered at the convention, and adequate consideration of which would make it a great convention. They afford opportunities for papers, reports and discussions which would be most interesting and most valuable if frankness, intelligence and courage prevailed in them.

Is this opportunity going to be missed and the convention allowed to consist of mere perfunctory threshing over of old straw, or is the opportunity going to be grasped and the convention made one which will be of really great value to mechanical department officers and the railroads? This will not depend entirely upon the mechanical department officers. It will depend largely on the railway executives. It will depend upon whether the executives tell their mechanical department officers that matters such as those which have been mentioned are too sacred and delicate to be frankly talked about at a convention, or tell them that the more squarely these problems are faced and the more fully and freely they are discussed the sooner their solution will be effected.

One of the most foolish and harmful superstitions in the railroad business is the widely prevalent superstition that it is all right for railway officers to get together and publicly discuss the technical problems of the industry, but that

it is dangerous for them to get together and talk publicly about the great economic and human problems of the industry. One of the principal causes of the troubles the railways have been having for years is that their officers have not thoroughly studied and frankly and fully discussed the economic and human problems of the business and the methods for solving them. Does the existing labor situation in the railroad industry indicate that the prevalent past policy of dealing with it has been a success? Is there any industry in the United States today which has relatively more men in it who constantly resist efforts to increase its efficiency or who gladly listen to every misrepresentation of its management that is spread abroad and actively participate in propaganda against its management?

The officers of the Mechanical Section, with the sanction and approval of their superior officers, should begin at once to prepare to make next year's mechanical convention the most valuable ever held. They should recognize from the very start, however, that they will not do this unless they decide to discuss frankly and fully the important and vital problems of the mechanical department, including its labor problem. There have been too many mechanical conventions within recent years at which 90 per cent of the time has been consumed in the consideration of problems to which mechanical department officers do not devote 10 per cent of their time when they are in their own offices or out on their own lines.

Let the mechanical department officers decide to devote 90 per cent of the sessions of the next convention to the problems to which they devote 90 per cent of their thought and energies at home, and the convention will be most important and valuable to the railways of the country—and it will not be unless this is done.

## The Farmer and Freight Rates

NOTHING IN THE FUTURE is more certain than that within the next year there is going to be a great struggle over freight rates on farm products. In the western states many candidates for the national House of Representatives and Senate devoted most of their campaign speeches to attacks upon the Transportation Act and the present freight rates, which they attribute to it, and most of the candidates who did this have been elected. Some of the western state railway commissions already have started proceedings for further reductions of freight rates. The farmers have been told that most of their present troubles are due to freight rates, and they believe it.

There is no doubt that the farmers generally are suffering severely from present economic conditions. The situation in which they find themselves and the transportation situation are the two conditions which afford the strongest arguments to those who express doubt whether the period of prosperity the country is entering will last long. If, however, the farmers would investigate the facts for themselves, instead of believing the gross misrepresentations of men such as Senator LaFollette of Wisconsin, and Messrs. Brookhart and Howell, who have just been elected to the United States

Senate from Iowa and Nebraska, they would soon find that they are laboring under a remarkable hallucination when they attribute most of their troubles to freight rates.

Freight rates are higher compared with the prices of farm products than they were immediately before the war. *But it is also true that the prices of almost all the things the farmer has to buy are higher compared with the prices of farm products than they were before the war.* The railway rates and prices of the year 1913 are usually selected for comparison with present railway rates and prices. The average rate per ton per mile in 1913 was 0.729 cents and in 1921 it was 1.275 cents, an increase of 68 per cent. As a result of the 10 per cent reduction made this year, the average rate is now 57 per cent higher than in 1913. Wholesale prices of all commodities are reported monthly by the Bureau of Labor Statistics of the Department of Labor. These statistics show that in July, 1922, the average price of farm products was 35 per cent higher than in 1913. What do the statistics of the Bureau of Labor show regarding the average wholesale prices of other commodities? They show that in July, 1922, the average price of cloths and clothing was 80 per cent higher than in 1913; the average cost of



fuel and lighting, 154 per cent higher; the average price of lumber and building materials, 70 per cent higher, and the average price of house furnishings, 78 per cent higher. The average wholesale price of all commodities, except farm products and foods, was 62 per cent higher than in 1913. It will be seen that the increase over 1913 in the prices of almost all other things the farmer buys was greater than the increase in average freight rates.

But why compare the statistics of 1913 with those of 1922? Railway rates had descended to almost the lowest level ever reached in 1913. On the other hand, the prices of farm products and other commodities had been increasing for some years before that. The average railway rate is now only 50 per cent higher than the average railway rate of the 10-year period, 1900 to 1910. As compared with the average prices of 1900-1910, the average price of farm products showed an increase in July, 1922, of 74 per cent; of cloths and clothing, 99 per cent; fuel and lighting, 176 per cent; metals and implements, 40 per cent; lumber and building materials, 70 per cent; house furnishings, 82 per cent. The average increase in the wholesale prices of all commodities was 79 per cent as compared with an average increase in freight rates of only 50 per cent.

These statistics show conclusively that the increase which has occurred in the average freight rate, as compared with the increases which have occurred in the prices of commodities, is being enormously exaggerated.

Furthermore, the farmer makes only a comparatively small part of his total expenditures for freight transportation. James R. Howard, president of the American Farm Bureau Federation, is authority for the following estimate of expenditures made by the farmers in a year: For purchases at wholesale prices, \$7,018,340,000; for interest, at least \$1,000,000,000; for taxes, \$663,000,000; for railway transportation, freight and passenger, \$1,103,000,000. These figures make a total of \$9,784,000,000 for expenditures made by the farmers. If this estimate is correct, the farmer's expenditure for railroad transportation is only 11 per cent of his total expenditure; his expenditure for freight transportation is not more than \$800,000,000. Therefore, of his total outlay not more than 8 per cent is made for freight transportation.

Upon what theory of economics can it be claimed that the farmer is being ruined because there has been an increase in the cost of something for which he makes only about 8 per cent of his total expenditures?

According to Mr. Howard's estimate the farmer is paying about a billion dollars a year in interest. This is more than he is paying for freight transportation. The total mortgage indebtedness on the farms of the country increased 132 per cent between 1910 and 1920. The average rate of interest also increased, so that what the farmer pays in interest has increased much more than what he pays for transportation.

Nothing could be plainer than that the real cause of the farmer's troubles is the disparity which exists between the prices of his products and *the cost of all things for which he has to pay*, and that only a relatively small fraction of his present troubles is due to freight rates. Why, then, do men such as Senator Capper of Kansas, Senator LaFollette and Messrs. Brookhart and Howell tell him that most of his

troubles are due to freight rates? Why do they not tell him the truth—viz., that no reduction of freight rates which there is the slightest possibility of his getting would help him much, and that if the situation in which he finds himself is really to be improved, he must secure a more satisfactory relationship between the prices of the things he has to sell and the costs of all the things for which he must pay? The reason why they do not is that they are demagogues who attack the railways and their rates because they believe that by doing this they can best promote their own political interests. Senator Capper is a wealthy publisher of many farm papers. Is it entirely unreasonable to suspect that the reason why he so persistently attacks railway rates and ignores the relatively high cost of other things besides transportation that the farmer has to buy is that the people who sell these other things to the farmers advertise in his farm papers?

The fact is that the farmer can less afford to have reductions made in his freight rates than in the cost of anything else he buys. The farmer is today suffering heavy losses because the railways are unable to furnish enough transportation to move farm products satisfactorily to market. This condition can never be remedied except by an increase of railway facilities. A sufficient increase in railway facilities can never be secured unless the railways are allowed to earn net returns large enough to enable them to raise large amounts of new capital. To reduce railway rates under present conditions would inevitably be to keep the net return earned by the railways inadequate. The railways as a whole could not financially stand any further reduction of their rates unless it was accompanied by further reductions of wages and the prices of the fuel and materials they have to buy. But under present conditions it would be impracticable for the railways to secure further reductions of wages. There is no perceptible tendency of the prices of materials to decline. The cost of coal has been increased as a result of the coal strike.

Under these conditions an order, whether made by the Interstate Commerce Commission or any other government body, including even Congress itself, for a reduction of railway rates would be confiscatory, and therefore unconstitutional and void.

In the course of years further reductions of railway rates may become practicable. They will not become practicable, however, until corresponding reductions in the prices of commodities, in rates of interest and in the wages of labor have been or can be brought about. The railways cannot reduce their rates as long as the wages of labor and the prices of commodities remain so much higher than they were before the war, because the railways have to pay these high wages and high prices themselves. They never can make pre-war rates until they can get labor, materials and fuel at pre-war costs. To force a further reduction of railway rates under present conditions would do little toward bringing about the needed general readjustment, and it would be ruinous to the railways and make it impossible for them to provide the increased transportation service that the farmers and all the other producers of the country imperatively need. Demagogues may go on lying to the farmer and misleading him as long as they like, but these are the irrefutable facts.

Twenty-seven passengers injured and a damage bill of perhaps \$15,000 constituted the net result of a crossing collision at Houston, Tex., as described in one

**Old Rules  
Not Outlawed By  
Ignoring Them** of the latest investigations made by the Interstate Commerce Commission, reported in another column. This collision was due to open-eyed and evidently deliberate violation of two rules which have been well-known for years; first, the rule to stop before crossing another railroad unless interlocked signals are provided—a rule which, in essence, is at least 60 years old—and, second, the rule to use air brakes on long freight trains, which is of many years' standing. Let us not entertain the superficial idea that automatic train control is the only problem in the prevention of collisions. Had either of these unlawful practices been eliminated, says the report, "this accident undoubtedly would have been prevented."

Two unique contributions on improving the relations with the employees appear elsewhere in this issue. They present some interesting facts and both of

**Improving  
Employee  
Relations**

them are written by neutrals—one a Y. M. C. A. secretary and the other a college student who has spent a couple of summers in railroad service. Both of these, in different ways, stress the necessity of a "get together" spirit on the railroads which will eliminate the gulf between the employees and the executives and allow them to meet in a friendly way on a common platform. There are many ways in which this better relationship can be cultivated. Although many progressive industries have been promoting employee representation for a number of years, the term has been little used and is hardly understood on railroads. The inauguration of such a plan on the Pennsylvania Railroad, which permits the groups of officers and employees at a local point, on a division, or in a region, or on the system as a whole, to meet around a table to discuss their common problems, has worked wonders in getting each side to recognize the good points and claims of the other side and humanize their relations. It is remarkable how misunderstandings and grievances have melted away and have been replaced by a spirit of co-operation.

One unfortunate effect of the shop strike was its interference with the work of the various associations of railway officers.

**Quality  
Rather Than  
Quantity**

Although this did not militate against the success of any of the conventions held this fall, it caused a general postponement of the American Railway Engineering Association's committee meetings during the summer months, when the bulk of the sub-committee work is usually carried on. However, judging from the number of committee meetings which have been held by this organization during the past three weeks, this delay is now being largely overcome. There is every reason to believe that these committees will exercise scrupulous care to avoid the inclusion of any ill-considered or superficial work in the reports that are submitted for publication. But in the effort to expedite the progress of the committee work, there is danger that some defective material may creep into the published conclusions. It is well, therefore, that each committee keep definitely in mind the periodic admonishments of the association's officers, that reports be presented only on those assignments that have stood the test of mature thought. There has been a growing tendency in recent years to increase the length of the committee reports. This fact, together with the enlarged membership of the association, makes it increasingly difficult to undertake a detailed consideration of all of the reports at the annual conventions.

The result is that most of the committee reports are accepted as the word of the association with little or no change from the form in which they were presented. This imposes a responsibility on the committees which must not be borne too lightly. The aim should be for quality rather than quantity.

In periods of car shortage a special effort is usually made by the railroads to secure quick loading and unloading. This

**Delays  
to  
Freight Cars**

means of reducing the idle time of cars should not be neglected at present, but there are other features of car movement that deserve as much, or more attention. One of the most important is delays in yards. In making an average trip of 475 miles, a freight car passes through about four division terminals. It is very easy for dead freight to lose two or three days in yards and empty cars especially are likely to be delayed when yard tracks are crowded. The time lost between movements is usually much greater than the time wasted during loading and unloading and for that reason speeding up yard operation probably offers one of the greatest fields for saving cars. Providing a few tracks on which trains can be set after they are made up is a simple method of relieving congestion and avoiding delays that is applicable at many of the smaller terminals. Running trains through intermediate terminals without switching is another means of eliminating idle time which should be carefully considered.

When confronted with the necessity of increasing the track capacity of single track lines no road can afford to overlook

**Institute a  
Signaling  
Investigation**

the possibility of solving the problem by an installation of automatic block signals. Obviously, this would require an extensive investigation by competent officers. In many cases the management and the operating officers have considered signaling as a dubious quantity; in fact some roads in the absence of convincing data or due to a lack of study of train operations on roads equipped with signals, have actually constructed second track when an expenditure of only approximately \$4,500 a mile for signaling would have permitted the traffic to be handled on single track for years to come. For example, a certain road that had adopted a large program of second tracking, had failed up to 1917, to close up a few stretches of from 10 to 75 miles of double track on a 300 mile division. In 1919 an operating officer, in co-operation with the signal officers, instituted a traffic study that evolved a signaling system for the stretches of single track so as to increase the track capacity of the entire division to the extent that the completion of the original double tracking program can be deferred for years to come. On this same road there is a low grade single track division 165 miles long, connecting two trunk stems. For years, at certain seasons, this line has been congested with freight requiring rerouting over other divisions. On account of the many curves and rock cuts the expense of constructing a second track is excessive, and as a result little has been done to relieve the situation. However, this road has just awakened to the fact that an installation of automatic signals would relieve the congestion and obviate the necessity for second tracking for years. No doubt there are many other roads that, through a lack of co-operation between the operating, engineering and signaling departments, have missed opportunities for enormous savings. Therefore, on roads where certain single track divisions are known to be "bottle necks" in the system, it would seem advisable to require the signal engineer, in co-operation with the operating officers, to make an investigation and report on what can be expected from an installation of automatic block signals.



One of the interesting topics discussed at the Baltimore meeting of the Railway Fire Protection Association (*Railway*

### Protecting Records from Fire

*Age*, October 28, page 799) was the recent burning of the Burlington office building at Chicago; and one of the most significant utterances in the discussion was that of B. S. Mace, of the Baltimore & Ohio, who emphasized the importance of maintaining fireproof vaults on every division of a large railroad. A single one at headquarters is not enough. In almost every railway office are records and papers the loss of which would entail much inconvenience and loss of time and money. Some of them could not be replaced at any price. It is true that no railroad is so well provided with funds that it can install all the equipment it needs. When funds are available there must be a selection among various possible expenditures in accordance with their relative merits. In the ordinary course of business, however, it is the new machine or other improvement which promises direct and immediate savings to which attention is most easily directed. Ordinarily it is only after a disastrous fire has occurred that the installation of fireproof vaults and filing cases for the protection of important records receives the attention it deserves. This condition is unfortunate, for it is much more profitable to lock the stable with the horse within than to barricade the door after the animal has been stolen. Similarly the protection of records which can be replaced only at great expense or not at all should be considered on a par with improvements which promise a direct money return. The safeguarding of valuable possessions already in hand is quite as important as the acquisition of new things—be they bridges, machines, buildings or records and documents which represent the expenditure of money and effort in their compilation.

"Net railway operating income," the term which the *Railway Age* has recently been discussing in these columns, is given

### A Figure of Leading Importance

an official or legal definition in that much discussed section of the Transportation Act—namely Section 15-a. The definition is contained in paragraph 1 and reads as follows: "... and the term 'net railway operating income' means railway operating income, including in the computation thereof debits and credits arising from equipment rents and joint facility rents." In last week's issue, page 830, there was given a list of the items in the form on which the carriers report their monthly earnings to the Interstate Commerce Commission and an explanation was given showing how the figure of net railway operating income was worked out. Quotation of the definition as given in Section 15-a adds nothing to the definition as given in the description of the monthly report form. The point in introducing it here at this time is to emphasize the importance of the figure and in so doing to make clear the value of a proper understanding of what it means. It may be worth while at this time to refer to the fact that it is net railway operating income which for all the roads in a rate-making group is supposed to equal  $5\frac{3}{4}$  per cent on the property used in the service of transportation. For federal control it was the basis of standard return. It seems hardly necessary also to add that net railway operating income is in the case of the individual road the figure upon which is based the computations for the recapture of half the earnings over 6 per cent. All in all, therefore, the figure of net railway operating income is a very significant and important one. In the monthly reports of the carriers as individuals or in total, it serves as an index available 12 times in the year for use by the commission, by railroad men, by investors and the public generally. In its annual form it supplements and supplants

the monthly figures, and in addition stands as one of the basic indices in railway regulation. The figure in whatever form it may appear has had a deservedly increasing popularity. It is unfortunate, however, that there still remains considerable hesitancy about using it and some inconsistency, embodied chiefly in the difficulty of comparing or reconciling the figures shown in the monthly reports with those covering the year as a whole.

The wholesale railway consolidations under way in Great Britain are being effected by the exchange of securities in

### Consolidation by Amalgamation

the new companies for those of the existent companies, rather than by the acquisition of control of smaller companies by purchase of stock or lease by the larger companies. These exchanges of securities are arranged, insofar as possible, to provide new stocks and bonds of the same earning power and relative security as those of the old companies. Under the terms of the Railways Act of 1921, all British railways must be consolidated into four non-competing systems. The companies are required to submit plans for consolidation to the Amalgamation Tribunal, a body created by the Railways Act, before January 1, 1923. If satisfactory plans are not filed by that date the tribunal is authorized to prescribe provisions of its own formulation. The directors and security holders of the railways have, however, been active in their negotiations to arrive at equitable and acceptable plans of amalgamation and their efforts have, generally speaking, been quite successful, considering the great variety of interests which they have had to reconcile. The provisions for railway consolidations in the railway law of this country are voluntary. The carriers are not compelled to consolidate, although there is some agitation in Congress to make the consolidation provisions of the Transportation Act obligatory on the railroads. At any rate, however, there will probably be many consolidations of railways in this country during the years to come, even if they are not forced upon the roads. The British method of amalgamation by an exchange of securities has certain advantages over acquisition by lease or purchase of stock and a study of British practice might be of value to railway officers in this country who are interested in the subject of consolidation.

Railway managements as a whole are giving far more attention to publicity than they have in the past. They are fast

### Receiving Representatives of the Press

learning the desirability of improving the relations with both the public and their own employees by educating them as to the problems with which the managements are confronted and by giving them facts relating to railway operation and finance. Much more, however, can be done in this direction. One way in which some roads can greatly improve matters is to show more appreciation to the representatives of the newspapers. Government officers at Washington, including the President and prominent members of his Cabinet and Administration, make it a practice to set aside a certain hour once a week, or oftener, to receive press representatives and to talk with them frankly as to their problems and answer questions. This is in addition to the regular news releases from their offices in typewritten or printed form. It is understood that these officers will not be quoted direct, unless specific permission is given so to do. Members of the press, however, are given a view back-stage, as it were. This makes it possible for them to anticipate certain important developments and more correctly to interpret the situation to their readers. This practice not only conserves

the time of both the Government officers and the representatives of the press, but it is invaluable to both parties in directing public thought along the right lines. It would be impossible to overestimate the value of these informal meetings with representatives of the press in recent years. Why cannot railway officers adopt the same policy to advantage? Newspaper men complain that they find great difficulty in getting to some of the prominent railroad officers; railway officers say that too much time is often required in receiving representatives of the press. An important point of contact is therefore being largely neglected and lost. Why not set aside definite times each week to receive representatives of the press, talk to them of the road's problems and answer questions as far as it is possible to do so? It would help to break down a most undesirable wall which now exists between some railway officers and the press. It would eliminate a lot of misunderstanding and be exceedingly helpful to the railroads in improving the relations with both the public and their employees.

Although Henry Ford and his son continue to give advice to the railroads, it is noted that they have been less inclined recently than they were for a time to base their discussions on the "remarkable" results experienced on their own railroad, the Detroit, Toledo & Iron-  
**D., T. & I. Again**  
**Experiences**  
**Deficits**  
 ton. After the Fords had bought this road and given it a large volume of new traffic, the results were much more satisfactory for a time than those obtained by the former management, but the improvement has by no means been kept up, as expenditures for maintenance and for hire of equipment have increased with the increase in traffic. For the first six months in 1922, the road's reports to the Interstate Commerce Commission disclose, it had a net operating income of \$705,518, as compared with \$190,082 for the similar period of last year. However, for the month of July there was a deficit of \$16,367, for August of \$300,404 and for September of \$383,097, with the result that for nine months of the calendar year the net operating railway income has been reduced to \$5,650. Operating revenues for that period were \$6,687,749, an increase of \$1,906,539, while the expenses were \$5,577,756, an increase of only \$1,779,842. However, there was also an increase of \$463,855 in the debit balance of equipment rents. The September revenues also showed an increase over September of last year, but the increase in expenses was still greater.

Locomotive orders in October totaled 184, freight car orders 14,498, and passenger car orders 116. For the ten months period the totals for domestic orders have now reached 1,856 locomotives, 125,658 freight cars and 1,553 passenger cars. The total of 184 locomotives in October was not bad; it was,  
**Equipment**  
**Orders in**  
**October**

however, not as good as the totals reported for the four preceding months. Why there should have been a falling off it is difficult to say. The disappointing railway net reported by most roads for August and September was possibly a deterrent to purchasing. A more important reason may have been that many roads that have already placed their orders are having difficulty securing deliveries. Some sizable inquiries, however, are in the market, so the prospects for November look to be far from disappointing. The orders for freight cars in October were much better than those for locomotives. The October freight car total—14,498—was double those for August and September combined. It was exceeded, however, by narrow margins by the totals for July, May and February, but it was only half the total for

1922's biggest month to date—April—when the New York Central's business brought the total up to over 30,000. Interest in these car and locomotive figures now has two values—one embodied in the use of the figures as an index to the volume of railway purchasing and the other as an indication of the success the railways are having in meeting

CAR AND LOCOMOTIVE ORDERS

	Locomotives	Freight cars	Passenger cars
January .....	5	7,960	235
February .....	8	14,721	160
March .....	76	5,550	25
April .....	272	30,507	540
May .....	99	18,337	235
June .....	22	11,097	37
July .....	353	15,675	120
August .....	220	576	22
September .....	617	6,737	63
October .....	184	14,498	116
Total, 10 months.....	1,856	125,658	1,553

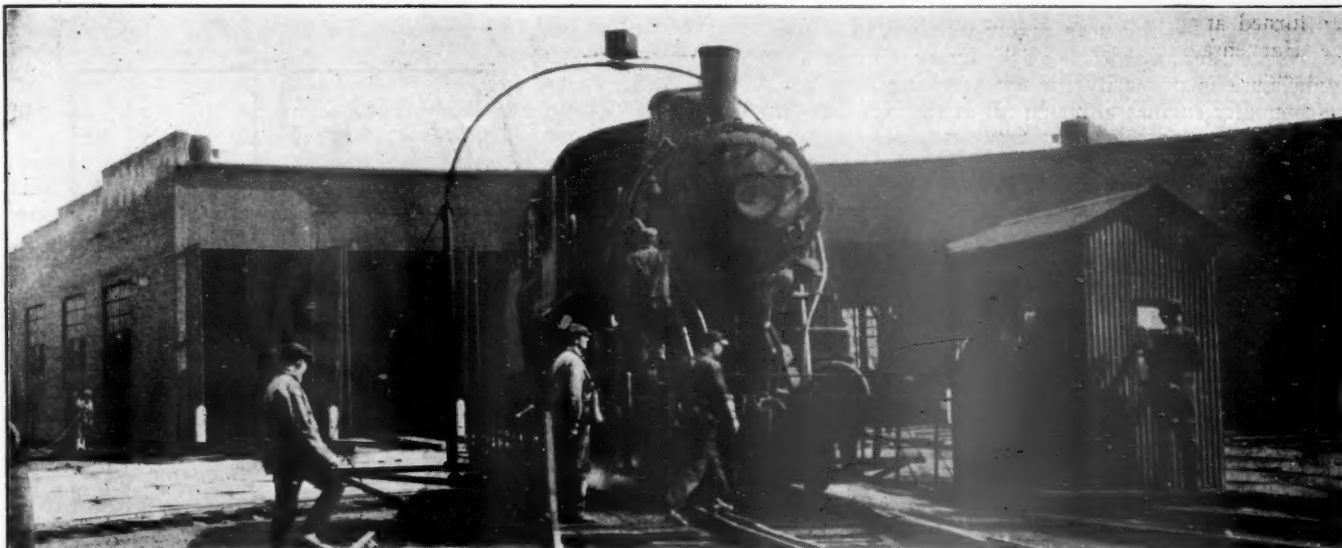
deferred equipment requirements. Car loadings of over a million cars for the week ended October 21 and the present severe car shortage are a measure of the deferred requirement. The railways are making fair progress towards meeting this particular problem; the volume of orders for new equipment is, on the whole, quite satisfactory. The present transportation situation, however, is plain evidence that still further progress is needed. The experts say that business in general should be extremely satisfactory in 1923. If they are correct, a continuation of the present volume of equipment purchasing and possibly an increased volume as well, are quite properly to be expected.

The unfortunate controversy between the Pennsylvania Railroad and the Labor Board over the question of employee

### A Word of Warning

representation has given the public at large a wrong impression of this whole question. It is even claimed by some that the real object of this new development was to destroy the Railroad Labor Board and the Transportation Act. Now that the full facts about the scheme are becoming known and understood, the real significance of this remarkable advance is becoming more widely recognized. The time was when railway officers assumed that questions of wages and working conditions were matters to be settled by the management only; the employee could take them or leave them. Unfortunately, some managements still do not recognize the advisability and necessity of giving the employees a voice in these matters. The employees on the Pennsylvania, as was shown in the article in the *Railway Age* of October 14, page 691, now have a voice in these questions and the machinery has been set up for the prompt hearing and adjustment of all grievances or criticisms relating to them. The results in increased loyalty and better production are truly remarkable. Other roads seeing these results are anxious to adopt similar measures. A word of warning is necessary. It must be recognized that this development on the Pennsylvania was not brought about in a few days, a few months, or even a few years. It began some years ago. The foundations have been well laid. The request for the present arrangement first came from the train service employees and it was finally worked out by them in co-operation with the officers. Other roads wishing to adopt similar measures must recognize this, and as indicated in the editorial on page 828 of last week's issue, must not attempt to hand down a ready-made plan, but must develop it with the co-operation of the employees. After all, the machinery of the plan is unimportant as compared to the spirit of a square deal which must dominate it. This same thing holds true of all personnel work.





*From the Turntable Side*

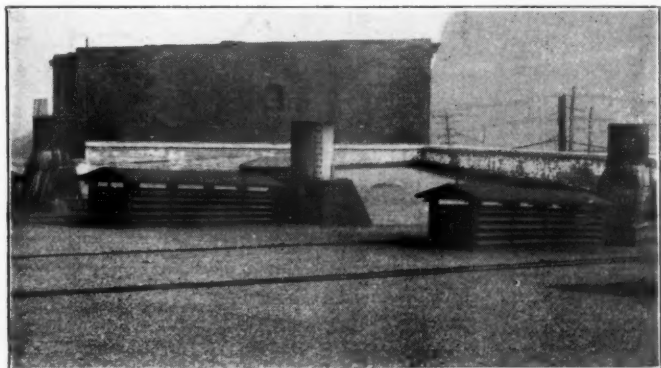
## Erie Builds New Enginehouse at Jersey City, N. J

**An Old Structure Destroyed by Fire Is Replaced Without Interference With Locomotive Operations**

**T**HE ERIE RAILROAD has recently completed a new engine terminal at Jersey City, N. J., which includes a 21-stall enginehouse, machine shop and other facilities, the construction of which was carried on "under traffic." It replaces an old layout which was destroyed by fire and was built on the old site without interference with operation, the old turntable and radial tracks being kept in use for the turning and servicing of both passenger and yard locomotives. Because of the restriction as to location and space and the necessity for non-interference with the motive power movements, the design and construction are both novel and

transfer table at the other. This transfer table is located between and serves the repair bay and a rectangular enginehouse of 12 tracks known as the "long" house. The fire destroyed the main part of the layout, leaving only the transfer table and the "long" house. Most of the engine pits, which were of timber, were badly damaged.

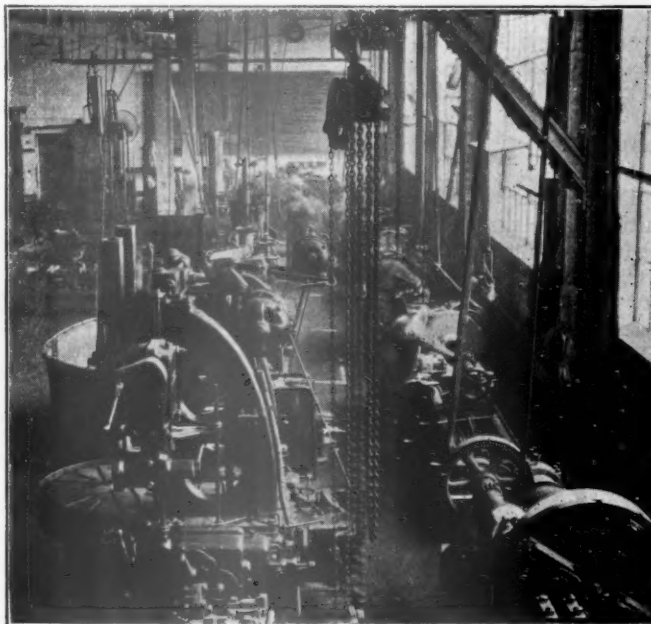
Jersey City is the eastern terminal of the Erie and, as a



**Alternate Installations of Two Types of Smokejacks**

interesting. The new building is a combination of a radial type 105-ft. enginehouse and a rectangular building.

The old enginehouse was of timber construction with 21 stalls served by an 80-ft. turntable and adjoined Pavonia avenue, a heavy trucking thoroughfare ending at the ferries. The back wall of the structure was parallel to the street line, a plan that was followed in the construction of the new enginehouse. In conjunction with the 21 stalls in the enginehouse, there was a repair bay containing 8 tracks which connected with 6 radial tracks at one end, and with a



**General Arrangement of the Machine Shop**

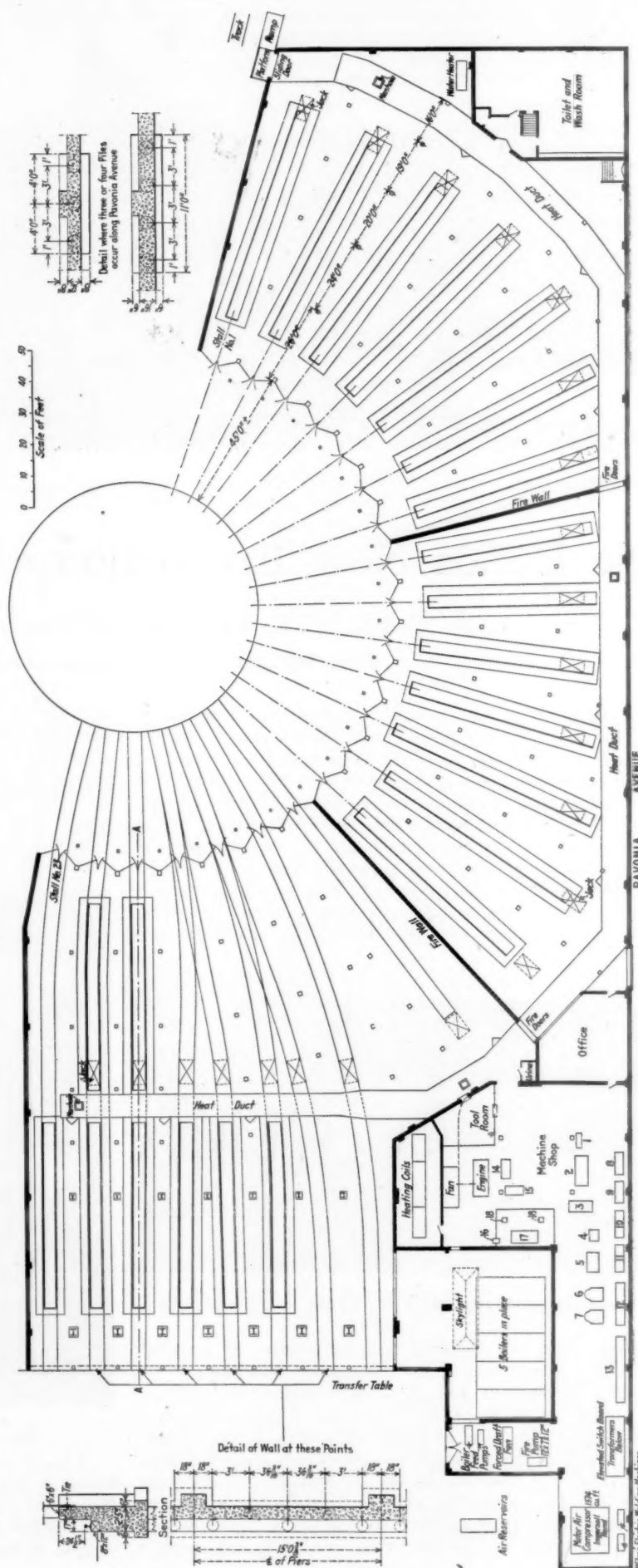
result, a large freight and passenger business is handled at this point. In addition there is a heavy commuter traffic. The freight engines and through line passenger engines as well as a large number of switching and yard locomotives

are turned at the Secaucus engine terminal in the Hackensack meadows. The Jersey City enginehouse is primarily for the servicing of the commuter engines although all of the New York division passenger locomotives and a few yard locomotives are also handled there. About 200 engines are turned daily at Jersey City which, in connection with the congested layout, presented a problem that was easily rendered serious by the loss of the enginehouse. It became imperative that the utmost speed be developed in erecting another structure with a minimum of interference to engine movements and motive power repair requirements since under the circumstances the old tracks had to be continued in use. At the same time it was desired to use this opportunity to modernize the layout. The result was that construction and design proceeded almost simultaneously and both were largely prescribed by the existing conditions, predominant among which was the location of the turntable.

The new layout is a rectangular shaped building, having straight walls on three sides and the customary inner circle of doors facing the turntable. It is of brick and concrete construction with a timber superstructure of the shed roof type modified to fit the rectangular shape at the corners and where joining into the machine shop and the repair bay monitor. There are 21 stalls, divided into three sections of seven stalls each, one section adjoining and actually being a part of the eight-track repair bay of the monitor type. In one corner of the rectangular house beyond the radial section is located a large machine shop, the boiler and engine room, forges, air compressors and pumps, hot air heating equipment and the offices. A similar corner, although smaller, at the other end has been utilized for the wash-room, shower baths, and lavatories and above this, in a small second floor, are located the lockers. A lean-to adjoining the north wall of the repair bay houses the pumps, tanks and other machinery for a complete boiler washing system.

The rectangular shape of the building resulting from the location of the center of the 80-ft. turntable only  $159' - 3\frac{1}{8}"$  from the street line, the existing radial tracks and the necessity for complete utilization of all available space, produced a non-uniform spacing of pilasters in the street wall. Thus the distance between each pilaster increased gradually at either side of the turntable center line perpendicular to the street, tending to become too wide for economical construction beyond the points where the street line intersected the outer circle of the standard 105-ft. section. Between these points, that is, along the chord, single pilasters of heavy construction were used while in the remainder of the wall, intermediate pilasters were used to permit of the easy installation of standard size sash.

Much of the foundation is supported on piling, the site of the enginehouse being filled ground near tidal waters, the piling being driven in clusters of from two to four under the pilasters. Four piles were driven under each of the single pilasters in the chord section,

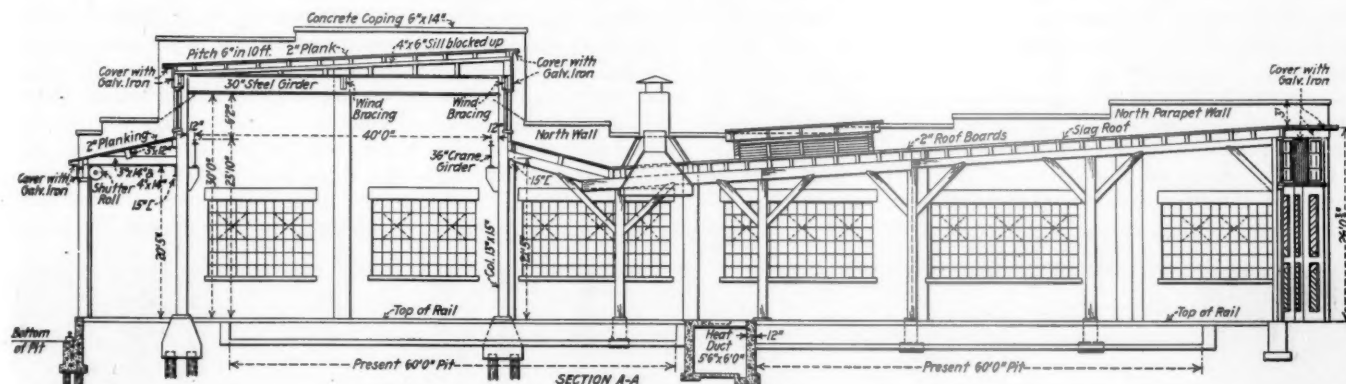




three under each of the other main pilasters and two under the intermediate ones. This, as well as the location and number of piles in the other sections of the building are shown clearly in the illustrations. Piles were driven and cut off at an elevation of 1 ft. 6 in. above mean low water. These were capped or surmounted with concrete footings, 3 ft. wide, 20 in. thick, and from 7 ft. to 13 ft. long depending upon the number of piles and the location. These footings carry piers from 5 to 11 ft. long, 13 in. thick and 4 ft. high with an 8-in. by 24-in. pilaster poured integrally with it on the inner side. The street wall proper is carried on a continuous reinforced concrete girder, resting on these piers and running the

with 6-ft. by 6-ft. footings carrying a 2-ft. 4-in. square pier 8 ft. 9 in. deep.

The repair bay is of the monitor type with a steel superstructure fabricated from floor beams, chords, etc., taken from an old steel bridge across the Susquehanna river. This work was done by company forces, the erection being handled by the bridge gangs. A 15-ton electric traveling crane will be installed in this section of the building, provision having been made in the design and construction for this purpose. The crane bay is 42 ft. 7½ in. wide from center to center of posts and runs the full length of this section. A Whiting hoist of 200-ton capacity has also been installed



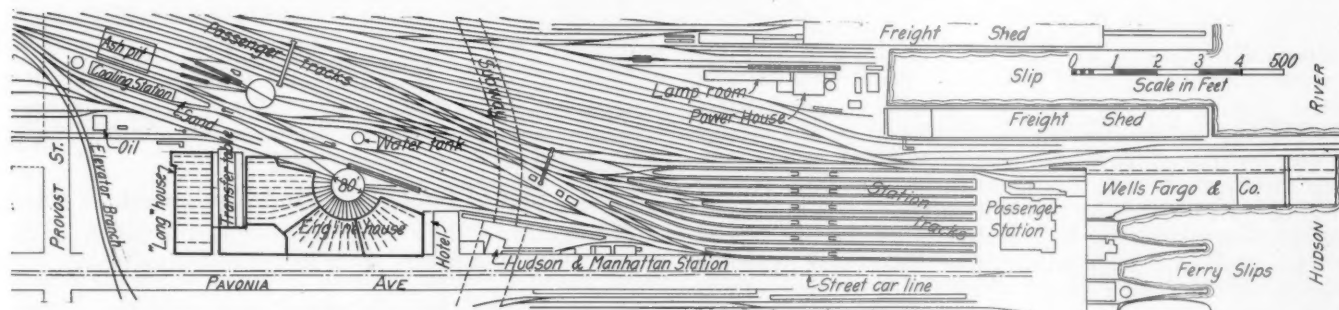
A Cross Section Through the Enginehouse and Repair Bay

full length of the wall. It is 13 in. thick and 7 ft. 4 in. high with an 8-in. by 24-in. pilaster poured integrally with it to correspond with the pilaster section poured with the piers. The remainder of the street wall with the exception of the lintel, which is another reinforced concrete beam running continuously, is of brick and steel sash. The foundation adjoining the transfer table is a gravity wall stepped to carry one of the transfer table rails.

The engine stalls are designed on the basis of a standard 105 ft. house with five bays spaced from inner to outer wall at distances of 26 ft., 24 ft., 20 ft., 19 ft. and 16 ft. The limiting factor of the distance from the center of the turntable to the street line made it necessary to continue the old

in this section in conjunction with four new concrete pits. Other crane and hoisting facilities consist of a series of six post cranes of 16-ft. radius installed at convenient points throughout the house.

Within the circle there are three stalls without engine pits, five with old wooden pits, four of which have been extended with concrete, and 13 new concrete pits with inside lengths varying from 52 ft. to 89 ft. The seven-stall section at the east end of the house has been floored with 6 in. of concrete poured with depressed drains on each outer side of the pit rails. These drains connect with the engine pits and carry off quickly any water which may accumulate on the floor during boiler washing, this section being used chiefly for



The Engine Terminal Occupies an Extremely Congested Location

angle between tracks of about 8 deg. 12 min., 49 sec. in order to secure sufficient clearance at the doors; instead of the usual standard of the Erie for this length of stall of about 7 deg. The roof structure is of timber overlaid with Barrett roofing and is supported upon wooden posts spaced as described above. These in turn are carried on and anchored to heavy concrete piers and footings with a bearing surface of 6 ft. by 6 ft. The lower footing is 18 in. thick, the upper is 3½ ft. by 3½ ft. and 12 in. thick and the pier is 1 ft. 6 in. square. The repair bay, having been designed for an electric traveling crane, required heavier foundations. Four piles were driven under each column and surmounted

that purpose. One pit contains a concave section of track with a 5½ in. drop, an arrangement which permits of easy removal of spring hangers, etc., without use of drop pits or hoists. The remainder of the enginehouse and repair bay has a cinder floor. The machine shop floor is Kreolite wood block laid on concrete while the boiler room, blower room and pump room are floored with concrete. Alternate installations of Johns-Manville and Dickinson smoke jacks have been made to secure comparative performance data.

The structure is heated by a modern installation of heating coils and blower discharging into a concrete air duct situated below the floor and around the outer circle. This

duct is tapped between each two stalls by lines of vitrified clay pipe which carry the heated air to the engine pits. Wherever the enginehouse tracks cross the duct, the upper slab has been reinforced and in addition, the running rails are carried in a double rail trussed construction.

#### Electrically Equipped for Economical Operation

The power used in the enginehouse for machine shop and other uses, is purchased from an outside source supplying two-phase energy at 2,300 volts, and 60 cycles which is stepped down to 220 and 110 volts according to needs. A unique method has been utilized to prevent the destructive action of gases on wiring installed in conduits above the gas line. From the switchboard at one end of the enginehouse, the conduit is led out through the street wall and along and over the exterior of the building. At points where it was necessary to run wiring above the gas line, it was accomplished by mounting the wire on glass petticoated insulators supported on the rafters.

On the inside of the street wall, two 100-watt lighting units are installed between stalls and so arranged that the light beams from each will cross each other, both also being

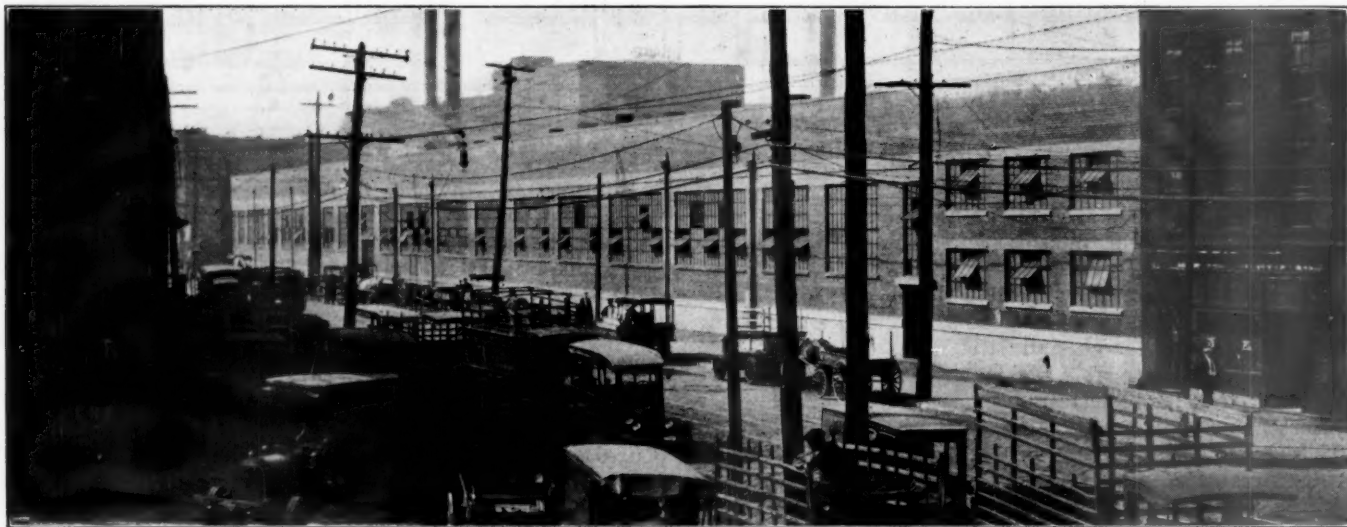
for charging train lines and for various shop and enginehouse requirements.

The air line to the enginehouse stalls is carried on brackets with other pipe lines suspended from the rafters and following around the building 30 ft. inside of the doors. There are five distinct lines, aside from the steam line, consisting respectively of a 3-in. air, a 4-in. cold water, a 4-in. filling, a 4-in. washout and a 5-in. blow-off line. Each pit has individual connections.

#### The Machine Shop Equipment

The machine shop is well arranged and well equipped for the work to be performed, which consists entirely of light running repairs. Should heavier repairs be required, a locomotive is sent to the North Shop on the other side of the tracks. At the entrance from the enginehouse to the shop there is a toolroom which serves all the men whether working in the shop or on locomotives. Adjoining this on the same side is a double blacksmith forge with a blower, two anvils and a trip hammer. A 3½-in. bolt threader is also placed on the same side of the room in a convenient position.

Six engine lathes are arranged in line along the street



The Street Wall of the Enginehouse on Pavia Avenue

inclined downward to an angle of about 15 deg. from the horizontal. A single unit of this type is mounted on the door posts. The circuits for this latter installation are brought over the roof of the enginehouse and down on the outside of the door posts. Three flood lights mounted on the roof, keep the turntable well lighted at night. Facilities for arc welding are furnished by two Wilson two-man sets delivering sufficient current for four welders through cables tapped at each stall and terminating in a 150-ampere charging receptacle. The welder simply plugs in his welding lead at the proper receptacle, removing it when he has completed his work.

The majority of the machine tools are belt-driven from an overhead line shaft operated by a 50-hp., 220-volt, two-phase motor with a 30-hp. motor in reserve which can be substituted immediately by throwing on a belt. Two large turret lathes, a blower fan, and a large Ingersoll-Rand air compressor unit have individual motor drives. The latter unit is of the duplex, two-stage, constant speed type with a capacity of 1,574 cu. ft., the regulation of the supply being accomplished by a five-step clearance control which loads or unloads the compressor in five successive steps, according to needs. The motor is a 260-hp. synchronous motor operating on 2,300 volts. The plant supplies air at 100-lb. pressure for use in the electro-pneumatic interlocking plant,

side of the shop. These range in size from 14 in. by 6 ft. to 36 in. by 20 ft. In front of the lathes is a 60-ton rod press, a double-end emery wheel grinder, a 42-in. drill press, a 4½-ft. radial drill, a 28-in. shaper, a 24-in. vertical turret lathe, and a 42-in. vertical boring mill.

#### List of Shop Tools and Equipment

The location of the various machine tools is shown on the general plan by numbers given in the following table:

- 1—60-ton rod press.
- 2—4½-ft. Mueller radial drill press.
- 3—28-in. Smith & Mills shaper.
- 4—20-in. by 3-in. double-end emery wheel grinder.
- 5—42-in. drill press.
- 6—24-in. Bullard vertical turret lathe.
- 7—42-in. Colburn vertical boring mill.
- 8—14-in. by 6-ft. Cisco engine lathe.
- 9—17-in. by 8-ft. National engine lathe.
- 10—18-in. by 8-ft. National engine lathe.
- 11—18-in. by 8-ft. National engine lathe.
- 12—28-in. by 12½-ft. Boye & Emmes engine lathe.
- 13—36-in. by 20-ft. New Haven engine lathe.
- 14—3½-in. Adams bolt threader.
- 15—Trip hammer.
- 16—Buffalo forge blower.
- 17—Double blacksmith's forge.
- 18—Two anvils.

#### Protection Against Future Fires

Ample precautions have been taken for proper fire protection in addition to the fire walls between each of the seven stall sections and between the machine shop and the engine-



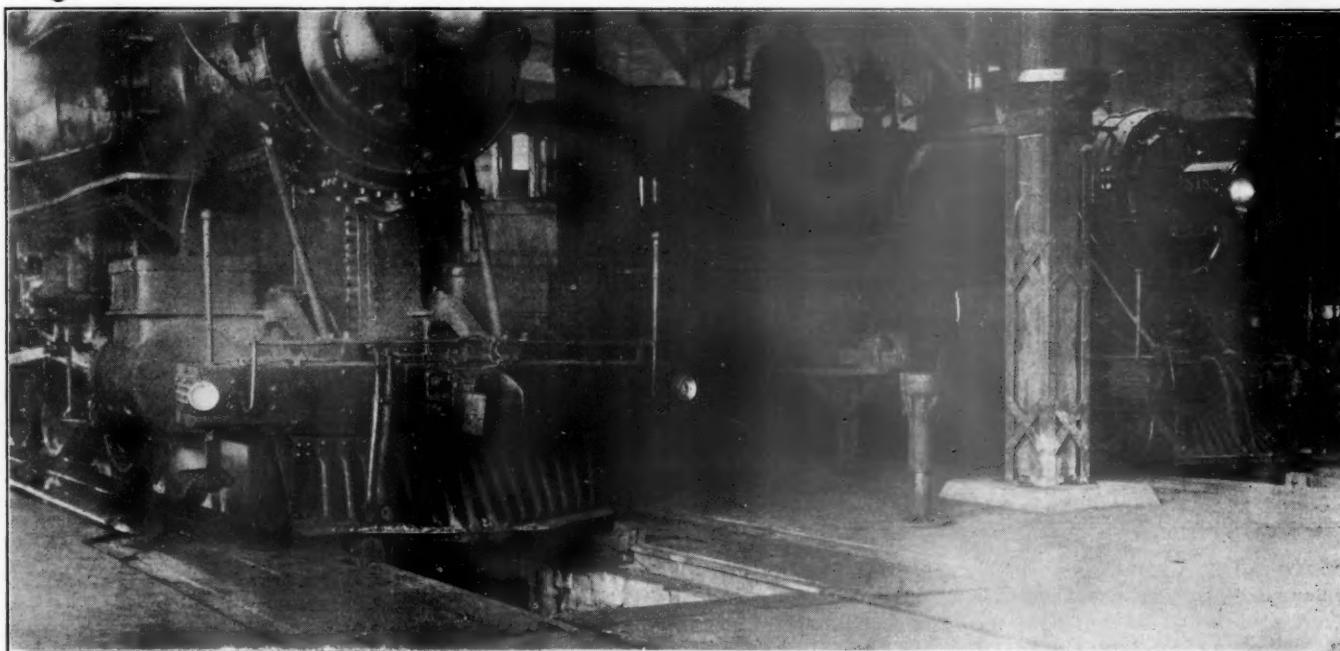
house proper. A fire pump situated in the machine shop connects with the main intake water supply by a system of valves which are normally set so that the water is by-passed around the pump. Each valve is plainly numbered while a large chart shows clearly what valves should be turned to deliver water to any section of the building or the yard. Fire hose connections have been installed between every two pits within the building, as well as on the roof structure, there being five in the latter instance alone. In addition numerous other hydrants are installed in and around the remainder of the building.

#### Methods Necessitated Close Co-operation

The construction of the Erie house necessitated close co-operation between the engineering, motive power and operating departments. The broad plan adopted was for the construction forces to be allowed three tracks at a time, free from interference while the operating department would deliver each 24 hours the designated cars of material before the starting of work each morning. The engineer in charge

place, work was started on the concrete piers. The supports for the roof posts were built in a progressive manner from one end of the house to the other, the excavating, sheeting and shoring where necessary, being handled by one gang, and the forms by another, after which followed the concreting, removing of forms and backfilling.

The erection of the superstructure was handled in a somewhat similar manner, the work in this case being divided and carried out progressively from one end wall in each of the three sections. The posts, roof beams and rafters were framed in a car placed on the track next to the wall after which the timbers were erected with the aid of a locomotive crane. Material for additional stalls was then hoisted on top of the roof and the remainder of the roofing structure framed and erected from the top with the exception of the posts. The posts were distributed well in advance of the roof construction and as needed were erected by a locomotive crane operating on engine stall tracks. This method insured the use of a minimum amount of ground work and a consequently greatly lessened interference with locomotive work.



Boiler Washout Section, Showing Depressed Drains, Post Cranes, Etc.

of construction was given authority to move engines in the roundhouse not under repair from stall to stall according to the needs of the occasion. This factor in itself eliminated much waste motion since it was possible to return one or more tracks to the motive power department and take possession of others promptly, thus keeping the construction forces and equipment steadily at work. Another factor of consequence was the assurance of ready material by keeping it "in load." On account of lack of storage space wherever possible all material purchased was loaded into Erie cars and when this was not possible it was transferred on the job as soon as such cars were available. These cars were held in one of the outer freight yards subject to the orders of the engineering department. Each afternoon a list of the cars containing the materials wanted for the next day's work was forwarded to the operating department, which moved them to the roundhouse after rush hours, the ones designated being set in on the enginehouse tracks before morning.

Construction itself was prosecuted from as many different points as possible. Both track drivers and land drivers were used for the piling, working in the case of the former from the radial tracks and extensions to them laid along the line of the outer wall. As soon as each cluster of piles was in

The new enginehouse was designed by the engineering department of the Erie, R. C. Falconer, assistant to the president and chief engineer, C. H. Splitstone, superintendent of construction and surveys; F. A. Howard, engineer of structures and O. V. Derr, resident engineer, in active charge of construction in the field. The Austin Company, Cleveland, Ohio, was the contractor for the superstructure and Frank D. Brown of Jersey City, N. J., for the substructure.

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NON-OBSERVANCE OF RULE 6 of the code of per diem rules, requiring subscribers to the car service and per diem agreement to make settlements for car hire with non-subscriber connections at the established per diem rate without any free time and without reclaim, has been complained of to the Board of Directors of the American Railway Association, and an appeal has been issued, calling upon the railroads to see that the provisions of Rule 6 are uniformly enforced. Non-observance results in discrimination as between non-subscriber railroads and in constant efforts of non-subscriber roads to obtain as favorable arrangements as may have been made with the few, all of which has a tendency to break down the entire per diem structure.

## Freight Car Loading

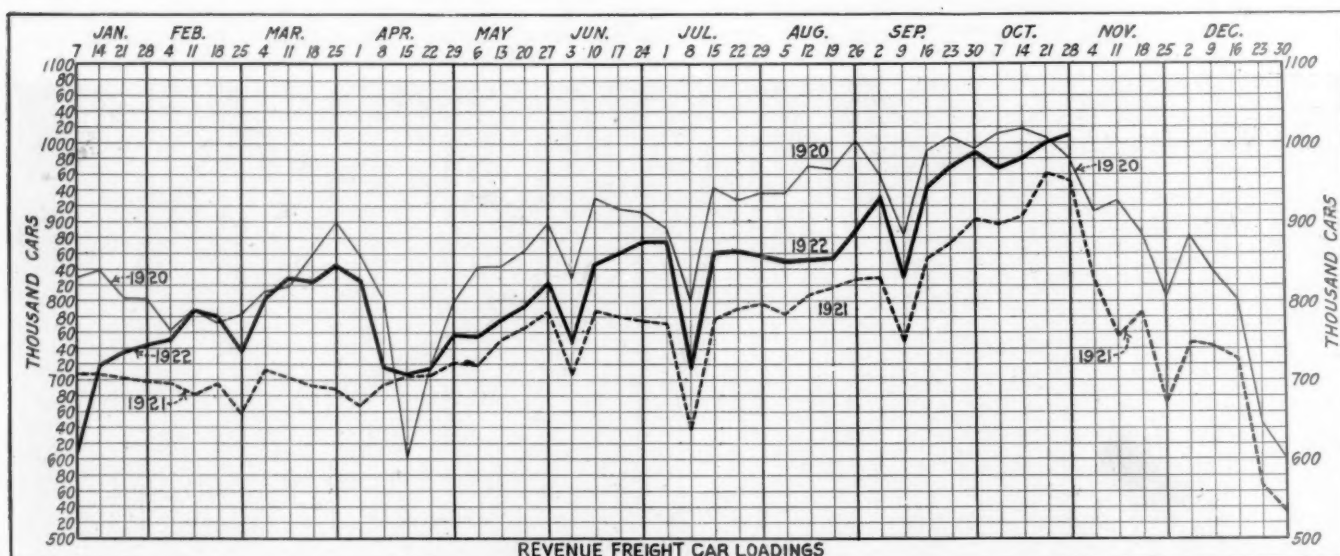
### Shows Further Gain

WASHINGTON, D. C.

REVENUE FREIGHT car loading continued to increase during the week ended on October 28 and was over the million mark for the second time this year. The total, 1,014,480, was also only 4,059 cars less than the record for a week established in October, 1920, and in all districts except the Pocahontas and the North Western, the loading was in excess of that for the corresponding week of 1920. The loading for the three western districts combined was also in excess of that for 1920. The total loading for the week was 10,721 in excess of that for the previous week, 63,096 greater than that for the corresponding week of last year, and 33,238 greater than that for the corresponding week of 1920. The peak of car loading this year is later

than it was in 1920 or 1921, but it is now regarded as probable that the next week's loading will show some reduction. The loading of grain and grain products was less than it was the week before although all other classes of commodities showed an increase and all but coal and merchandise l.c.l. showed increases as compared with last year. All except coal, coke and ore also showed increases as compared with 1920. The summary as compiled by the Car Service Division of the American Railway Association is given in the accompanying table.

The number of locomotives out of service for repairs showed a further decrease during the first half of October to 15,935, or 24.7 per cent, for repairs requiring over 24 hours, and 3,296, or 5.1 per cent, for repairs requiring less than 24 hours. The number of locomotives turned out of shop during the period was 11,404. However, the number of serviceable locomotives stored had been reduced to 950.



### REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, OCTOBER 28, 1922

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded		
										This year 1922	Corresponding year 1921	Corresponding year 1920
Eastern	1922	10,152	4,035	57,170	2,050	5,963	5,228	64,838	99,468	248,904	246,988	238,442
	1921	12,310	3,640	56,603	2,690	5,324	4,321	66,005	96,095	.....	.....	.....
Alleghany	1922	3,561	3,896	58,624	5,814	3,233	8,759	50,382	80,481	214,750	194,367	210,427
	1921	2,791	3,321	58,928	2,611	3,166	5,122	50,417	68,011	.....	.....	.....
Pocahontas	1922	212	369	18,881	370	1,681	48	5,464	3,779	30,804	.....	.....
	1921	276	441	25,000	212	1,432	2	5,881	4,029	.....	37,273	37,469
Southern	1922	4,041	2,654	22,830	1,206	20,992	1,342	39,065	46,357	138,487	.....	.....
	1921	3,378	2,307	26,790	580	16,937	568	39,541	40,833	.....	130,934	129,367
Northwestern	1922	15,594	10,214	11,299	1,480	14,697	30,187	27,092	42,709	153,272	.....	.....
	1921	13,129	10,139	12,586	872	12,776	6,463	29,318	39,964	.....	125,247	158,440
Central Western	1922	12,404	17,370	22,582	322	7,028	2,044	31,362	62,621	155,733	.....	.....
	1921	12,413	13,915	24,585	196	7,316	763	32,477	55,953	.....	147,618	140,817
Southwestern	1922	5,949	4,106	6,542	146	6,990	397	15,477	32,923	72,530	.....	.....
	1921	3,913	3,066	6,138	235	7,479	857	15,932	31,337	.....	68,957	66,280
Total Western districts	1922	33,947	31,690	40,423	1,948	28,715	32,628	73,931	138,253	381,535	.....	.....
	1921	29,455	27,120	43,309	1,303	27,571	8,083	77,727	127,254	.....	341,822	365,537
Total, all roads	1922	51,913	42,644	197,928	11,388	60,584	48,005	233,680	368,338	1,014,480	.....	.....
	1921	48,210	36,829	210,630	7,396	54,430	18,096	239,571	336,222	.....	951,384	.....
	1920	37,496	32,867	222,986	16,492	59,466	68,039	213,440	330,456	.....	.....	981,242
Increase compared	1921	3,703	5,815	.....	3,992	6,154	29,909	.....	32,116	63,096	.....	.....
Decrease compared	1921	.....	.....	12,702	.....	.....	.....	5,891	.....	.....	.....	.....
Increase compared	1920	14,417	9,777	.....	.....	1,118	.....	20,240	37,882	33,238	.....	.....
Decrease compared	1920	.....	.....	25,058	5,104	.....	20,034	.....	.....	.....	.....	.....
October 28	1922	51,913	42,644	197,928	11,388	60,584	48,005	233,680	368,338	1,014,480	951,384	981,242
October 21	1922	53,680	40,473	196,771	10,631	60,344	45,468	231,797	364,595	1,003,759	964,811	1,008,818
October 14	1922	52,492	39,141	196,926	10,208	59,727	46,362	226,123	352,491	983,470	910,529	1,018,539
October 7	1922	50,553	39,359	189,312	9,880	57,844	47,439	228,515	345,267	968,169	899,681	1,011,666
September 30	1922	52,129	39,830	189,349	9,456	58,742	49,777	234,517	354,581	988,381	904,831	992,283



# Railway Development Lags Behind Traffic Increase

## C. H. Markham Tells Railway Business Association How Inadequate Facilities Menace Prosperity

**T**HAT THE INCREASE in railway facilities during the past decade and more has been entirely inadequate to meet growing traffic requirements and that this check to railway development has resulted from restrictive legislation was the theme of the address of Charles H. Markham, president of the Illinois Central, delivered at the annual dinner of the Railway Business Association on Thursday evening. Other speakers were Senator George Wharton Pepper of Pennsylvania and James A. Emery, counsel of the National Association of Manufacturers.

Mr. Markham presented some interesting statistics to show the extent of the decline in railway development in recent years. For example: during the five-year period ended in

1921 the increase in the combined tractive effort of all locomotives was 60 per cent less than for the five-year period ended 1907; similarly, the increase in tonnage capacity of all freight cars was 85 per cent less for the period ended 1921 than for that of 1907. Mr. Markham also laid emphasis upon the significant fact that the present acute shortage of transportation is being felt at the beginning of a period of industrial revival and not, as has always been the case heretofore, at the peak of business activity. Mr. Emery, in his address, advocated an end to government interference in labor disputes unless there is imminent danger of an interruption in transportation. The addresses of Mr. Markham and Mr. Emery follow in part:

### Mr. Markham's Address

We have witnessed this year a remarkable change in conditions in the United States. The country recently was passing through one of the most profound business depressions in its history. It has emerged from this depression, and has entered a period of activity in production and commerce such as those which always have followed its panics and depressions in the past. Foreign conditions affecting our export business are very unsatisfactory, and it is impossible to measure the influence they will exert. But our domestic commerce always has been many times as important as our foreign commerce, and in our own land almost every condition seems favorable to another era of expansion and prosperity.

At the very threshold of this new era, however, we are confronted with a shortage of railroad transportation. The farmers have produced bumper crops. The railways have moved more grain this year than ever before in history. Nevertheless, the farmers complain that, although their big crop has not all been harvested, they cannot get enough cars for even the grain that is ready for shipment. Lumber manufacturers find themselves unable to ship the lumber they have produced and for which there is a demand. The coal mine operators cannot get anywhere near as many cars as they order. Manufacturers of iron and steel show that their output is being restricted because the railways cannot deliver them enough fuel and raw materials. Road building and other construction concerns complain that their business is interfered with by the priority in the use of open top cars being given to coal under an order of the Interstate Commerce Commission. Growers of fruit and vegetables say they are suffering large losses because they cannot get enough refrigerator cars.

Some of these complaints are exaggerated. Some are without justification. But they reflect a nationwide condition, the existence of which cannot be questioned.

#### Transportation Shortage, Heretofore Felt Only at Peak Times, Now Comes at Beginning

There have been other times when the service the railways could render has been unequal to the demands. This was the case, for example, in 1906 and 1907, and in the war years. But in every past time when there was a shortage of transportation it was felt only after the revival and increase of business had been going on for some time and had carried production and commerce to higher levels than ever before. What we call "car shortages" always have represented in-

adequacy of all railroad facilities. The "car shortages" of 1906 and 1907 did not come until toward the close of a ten-year period of industrial and commercial expansion during which the railways had increased by  $2\frac{1}{2}$  times the volume of freight carried by them. The car shortages of the war years did not begin until when, in 1916, the railways were handling 20 per cent more freight than in the previous year.

The outstanding fact regarding the present shortage of transportation, the significant fact which challenges our attention, is that it has been met at the very beginning of a period of business revival. In this respect it creates a situation unprecedented in the history of the United States—a situation which should cause every farmer and business man, every railway regulating official, every public man, every wage worker, to pause and reflect seriously.

#### Adequate Transportation Necessary

##### for Prosperity to Any Class

It is plain to every man who thinks that the wage labor can be paid, the income the farmer can get, the profits that can be derived from business, depend in the long run upon the total amount of production and commerce that can be carried on. If the necessities, comforts and luxuries each of our people have is to be increased, we must increase our total production and commerce more rapidly than our population. We have always done this in America. But nothing could be more obvious than that the increase in production and commerce which is vital to the welfare of all cannot be secured without a corresponding increase in transport.

It is a historic fact that in this country within the last one hundred years production and commerce and the material welfare of the people have increased faster than they ever have in any other country in the world. It is also true, as every student knows, that this wonderful material progress has been made possible by the fact that until recently our railroads always were developed ahead of, and prepared the way for, the growth of population and industry. The conditions which now exist, therefore, mark a revolution in our affairs. Nothing less than a revolution has occurred when our railroads, whose surplus capacity has always in past periods of business made possible the vast increases which have occurred in our production and commerce, are found threatening to prove unequal, or actually proving unequal, to the demands made upon them at the very beginning of a period of business revival.

The railways are now moving about as much freight

weekly as in 1920, when the highest record was made. In spite of this the "car shortage" recently reported has been the largest ever known, and the demands of shippers continue to increase. In past periods of business revival the increase in freight business has gone on until it has reached a point 35 to 150 per cent higher than ever before. We may well ask ourselves whether, with the railways finding it difficult to surpass the freight carrying record of 1920, they can be expected within a few months or years to handle such an increase in tonnage as past experience shows would be only normal in a period of general revival of commerce and industry.

#### Inadequate Transportation Costs Farmers \$400,000,000

Who can measure the losses which may be sustained by the country's people if the railways prove unable to increase anywhere near as much as they have in past periods the amount of freight handled? Mr. Julius H. Barnes, president of the Chamber of Commerce of the United States, was head of the government's grain corporation during the war, and has been in the grain exporting business for 30 years. In a recent address Mr. Barnes showed how inadequacy of transportation has so restricted the flow of grain from our farms to Europe that, in his opinion as an expert, the difference between the prices of grain on our farms and in foreign markets average 10 cents a bushel more than it would if transportation conditions in this country enabled the grain to flow normally to market. He estimated that if similar transportation conditions continued throughout the crop year the loss due to them suffered by farmers on grain alone would be \$400,000,000. He attributed the inadequacy of transportation to "an over-rigid system of government regulation over our railroads, which has extended over ten or twelve years." Apply similar reasoning to all the rest of the industry of the country, and you will get some idea as to why Secretary Hoover recently estimated that every period of shortage of transportation costs the country at least a billion dollars.

Why are we suffering from this shortage of transportation at the very beginning of a business revival? The correct answer must be given to this question, and the public must be convinced that it is correct. Without an informed public opinion the situation cannot be remedied.

The situation is partly due to the coal strike and the shop employees' strike. The long coal strike has imposed upon the railways a demand for the movement during the fall and winter months of a vast tonnage of coal which should have been moved in the spring and summer. The shop employees' strike has delayed repairs to a large amount of equipment which was in bad order when it began and which would have been made ready for service if the strike had not occurred.

#### Development of Industry Continues—

##### Railroad Development Lags

But it would be a serious mistake to assume that these strikes have caused the present shortage of transportation and that it will disappear when their effects have been removed. The causes of the present shortage of transportation and the still greater shortage there is reason for fearing go much deeper and farther back. During the last 15 years the production and commerce of the country, in spite of occasional reverses, have grown as rapidly in proportion as in previous years. The increases in the freight offered the railways conclusively prove this. But during this time the development of the facilities of the railways has steadily and rapidly declined. The time has come at last when not only has the surplus capacity of the railways been exhausted, but when their development has fallen far behind that of other industries. These are the real causes of the present situation.

#### Decline in Tractive Power Increase

##### 60 Per Cent, Car Capacity 85 Per Cent

In the 5 years ending with June 30, 1907, the number of locomotives in service on the railways of the United States increased 18,160. The end of this period coincided with the beginning of the period of restrictive regulation. Compare this with the increases that have occurred since then. In the 5 years ending with June 30, 1912, the increase in the number of locomotives in service was only 8,447; in the 4½ years ending with December 31, 1916, it was only 4,558; and in the 5 years ending with 1921 the number of locomotives in service actually *decreased* 664. The locomotives retired were constantly being replaced with more powerful engines, and the increase in the total tractive power, or total pulling capacity of the locomotives in service in the first 5 years of this period was 640 million pounds. In the next 5 years it was only 338 million pounds; in the next 4½ years 367 million pounds; and in the 5 years ended with 1921 only 262 million pounds.

Now, take freight cars. In the 5 years ending with June 30, 1907, the number in service increased over 480,000. In the next 5 years it increased less than 230,000; in the 4½ years ended December 31, 1916, it increased only 114,000; and in the 5 years ended with 1921 the number of freight cars in service actually *declined* 13,521. The cars retired were constantly replaced with cars of larger capacity, and the increases in the total capacity of the freight cars in service were as follows: 5 years ended with 1907, 23 million tons; 5 years ended with 1921, 16 million tons; 4½ years ended with 1916, 12 million tons; 5 years ended with 1921, 3½ million tons.

Comparison of the figures for the two 5-year periods farthest apart show that the increase in the total tractive power of locomotives was almost 60 per cent less, and the increase in the total capacity of freight cars 85 per cent less in the 5 years ended with 1921 than in the 5 years ended with 1907. Probably these statistics afford as good a measure as could be given of the decline in the expansion of the railways which has occurred.

#### Decline in Increase of Other Facilities

The decline in the amount and capacity of the equipment provided has been accompanied by a corresponding decline in other facilities provided. Construction of new lines, which formerly averaged about 5,000 miles a year, has dwindled until during the last 5 years more mileage has been abandoned than built. The enlargement of terminals, the construction of second and other additional main tracks, the improvement of stations, have been for years coming nearer and nearer to a standstill.

The fact that a decline in the expansion of the railroads has been occurring has been frequently stated and is generally known. I have given these statistics not so much to show there has been a decline as to make clear how much greater it has been than most people realize.

#### Railways Can Increase Facilities

##### if Capital Is Forthcoming

It should be evident to every well informed person that the country must have a revival of the expansion of its means of transportation, or its production, commerce, wealth and the well being of its people will never be able to increase again as in the past. Some advocate the development of other means of transportation, such as inland waterways, upon the theory that needed transportation can be obtained more economically by other means than by railroad development, or that adequate development of the railroads has become impossible. In my opinion, it is easily demonstrable that the additional transportation needed can be secured more economically by increasing the capacity of the railways



than in any other way. Furthermore, I say merely what every experienced railway officer will endorse when I add that if a reasonable amount of new capital can be raised by them the capacity of our railroads can be increased just as easily and rapidly in future as it formerly was.

### The Cause of the Present Situation

What is it that has caused this great and menacing decline in railroad development? What must be done to revive their expansion? From time to time it is suggested that regulation should be abolished and the managements of the railroads given the same freedom of action as those of other concerns. I believe the railroads, because of their character and fundamental importance to all other business, should be operated under the supervision of agencies controlled by the public. But while I am a firm believer in the principle of regulation, I also believe that government regulation as it has been practiced for 15 years is almost wholly responsible for the decline of railroad development and for the existing shortage of transportation. For 10 years before the war, regulation kept down the rates and reduced the net return of the railroads, although wages, prices and the returns earned in other lines of business were increasing. The policy of regulation was dictated chiefly by those who charged that the railways were enormously over-capitalized and who argued that because they render an essential public service the net return they are allowed to earn should be especially restricted. Persons who had money to invest more and more avoided the railroads. The market value of their securities declined, and with it the capital they could raise to expand their facilities. After the country entered the war they were unable satisfactorily to meet the demands. When the government after operating them 2 years returned them to their owners, without having substantially enlarged their facilities, their expenses had been increased so much more than their rates and earnings that they were incurring a large deficit, and the prices of their securities had sunk to new low levels.

Congress provided in the Transportation Act that the Interstate Commerce Commission should have authority to set aside rates made by state authorities which were discriminatory against interstate commerce or unreasonably unremunerative; that it should make a tentative valuation of the railroads and so fix the rates on this valuation as to enable the carriers, under economical and efficient management, to provide adequate transportation; and that for two years it should take  $5\frac{1}{2}$  per cent upon the valuation as its measure of a fair return and might in its discretion allow  $\frac{1}{2}$  of 1 per cent more to be earned.

The Commission in 1920 granted advances in rates which it believed would be sufficient to cover the increases in operating expenses which had occurred and to enable the railways to earn a return of 6 per cent upon the tentative valuation of \$18,900,000,000 made by it. But the country was just entering a period of business recession and depression. Railway traffic declined to the lowest level since 1915. In spite of the most drastic retrenchments, instead of 6 per cent the railways earned and received in 1921 only  $3\frac{1}{3}$  per cent—an amount barely equal to their fixed charges. Although a large part of the railways were threatened with bankruptcy, there was raised throughout the country a demand for a general reduction of freight rates. Farmers, business men, politicians, all joined in it. Reductions of rates being manifestly impossible without reductions of wages, and the cost of living and wages in other industries having declined, the railways applied to the Railroad Labor Board for general reductions of wages.

Reductions of rates were advocated on the ground that they were essential to a revival of general business. Without now arguing the question whether they were desirable or not, it is notable that general business began to revive before

any reductions of rates were made. Within the last 6 months the freight business handled by the railways has increased 30 per cent, and the net return earned by the carriers as a whole this year has been somewhat larger than last year, having averaged 4 per cent upon their valuation. Owing to this, to the relatively large advance which has occurred in the market prices of railway securities and to the prospective demands of a still heavier traffic, the railways thus far this year have ordered more cars and locomotives and begun more improvements of other kinds to enable them to handle more business than they have for several years. To the middle of October orders for locomotives this year has totaled 1,792, for freight cars 122,053 and for passenger cars 1,467.

### Adequate Revenues the Only

#### Solution of Railroad Problem

Clearly it is essential to the welfare of the country that the railways should as rapidly as practicable put their existing facilities in good condition, and that they should for some years rapidly improve and expand their properties. What is necessary to insure that this will be done? Those charged with the responsibility of managing railways can make but one answer. The one thing, and the only thing, which ever will enable and cause the railways to carry out a sufficient program of expansion will be to let them earn sufficient net return to raise the new capital required for that purpose. The question is not what interest and dividends railways ought to pay. It is what they *must* pay to get capital.

The Interstate Commerce Commission having, after 2 years more of investigation, again held reasonable the valuation placed by it upon the railways in 1920, has held it would be fair and in the public interest for them to earn in future an average annual net return of  $5\frac{3}{4}$  per cent on this valuation. In view of past experience in the railroad business and of present economic conditions it is impossible to comprehend how any reasoning mind could conclude that the earning power by the railways of any smaller average return than  $5\frac{3}{4}$  per cent over a period of years would enable them to raise the large amounts of new capital which, in the interest of the entire producing, commercial and consuming public, they should raise and invest.

It is a fact, however, which we must not minimize or disregard that a strong and widespread propaganda is being carried on to secure legislation to reduce the net return of the railways to a much lower basis than that which the Commission has held reasonable. It has been proposed in bills introduced in Congress to restore to the states the same authority to regulate rates that they had before the Transportation Act was passed. This would remand the railways again to the rule of 49 masters. It would result in the states again making state rates lower than the corresponding interstate rates. It would destroy the ability of the Interstate Commerce Commission to so regulate rates as to enable the railways to earn net returns adequate to attract a sufficient amount of new capital.

In addition, the valuation made by the Interstate Commerce Commission is being attacked by certain labor and political leaders on the ground that it is from \$5,000,000,000 to \$7,000,000,000 too large.

The passage of the Valuation Act under whose provisions the Interstate Commerce Commission collected and compiled the information upon which the valuation was based, was secured 9 years ago chiefly by men who claimed that the railways as a whole were grossly over-capitalized. Basing its estimate mainly upon the wages and prices of materials which prevailed in 1914 the Commission, after 8 years' work in carrying out the valuation law, has found that the value of the railways as a whole, while less than the investment shown by their books, is more than \$2,000,000,000 greater

than the amount of their securities actually outstanding in the hands of the public.

#### Attacks on Rate Making Provisions of Transportation Act

It would be unwise to ignore the fact that many people, especially railway employees, and farmers in the middle west who are suffering from adverse conditions, are believing and being influenced by propaganda against the railways. Its avowed purpose is to bring about changes in federal regulation by which the valuation would be scaled down billions of dollars and the net return of the railways correspondingly restricted. The attack is directed chiefly against the rate-making provisions of the Esch-Cummins Act. The most important of these provisions now in effect is that which directs the Interstate Commerce Commission in fixing rates to consider the need of the country for adequate transportation. Therefore, the principal thing Congress would do by repealing the rate-making provisions would be to say in effect to the Commission that it should not in future consider the need of the country for adequate transportation.

The principal lesson taught by the outlaw switchmen's strike two years ago and the recent shopmen's strike seem plain enough. Both, after doing much harm, proved failures. They plainly indicate that, having established an impartial tribunal to pass on labor controversies, the public will always be so strongly against railway employees who strike that most strikes will in future be foredoomed to failure from the start. The public and the railroads long since decided it would be best for all concerned for differences between the railways and their employees which could not be settled by direct negotiations to be settled by arbitration. Labor leaders have been hostile to arbitration. There are indications, however, that railway labor leaders who are not infected with radical hostility to the entire present industrial and social system, but who are simply striving to promote the best interests of members of their unions under the present industrial system, are losing confidence in strikes, and especially in strikes on a huge scale, as means for promoting the welfare of labor.

With respect to the valuation law and the rate-making provisions of the Transportation Act, there seems real danger that they will be changed for the worse unless the public can be given a better understanding of the railroad situation,

and of what must be done to improve it if it is not to be allowed to restrict the growth of production and commerce until it brings a great disaster upon the nation. That disaster must be avoided; and therefore adoption of the policy that would cause it must be prevented.

#### Duty of Executives to Educate Employees and Public

In concluding my remarks I wish to emphasize as strongly as I can the duty that those responsible for the management of the railroads owe to their security owners and to the nation to make much greater efforts than they ever have to give railway employees and the public a better understanding of railroad management, of the railroad situation and of the railroad problem. Most of the troubles of mankind are due to lack of understanding or to misunderstanding. A very large majority of the employees of the railways are good citizens who do their duty as they see it, and who desire to contribute their share toward their country's progress and prosperity. I have an abiding faith, based upon long experience as a railway officer, that if the managements of the railroads will not only treat the employees fairly, but will also get to them the facts about the railroad business which they are entitled to know, and appeal to and rely upon their intelligence and good sense, a large majority of railway employees will respond in what they say and do in the same spirit.

I have, besides, an abiding faith in the fairness and good sense of the American public. We should never have had the unfair and harmful policy of regulation we have had for fifteen years if there had not been abuses in the railroad business which the managements themselves ought to have corrected. Furthermore, we should not have seen this policy persisted in year after year if the railroad managements had not failed to use legitimate means which were available for presenting to the public the simple facts which demonstrate that, in spite of some abuses, the railways of this country have been as honestly, as economically and as public spiritedly developed and managed as any large industry.

The duty—the selfish duty, if you please—of helping create an intelligent public sentiment regarding regulation of railroads rests upon our agricultural leaders, our business leaders, our public men and our newspapers as much as upon railway managers; and all will suffer in the disaster that will result if such a public sentiment is not created.

### Mr. Emery's Address

If it is no longer necessary for a railway business man like John Stevens to convince a Livingstone that a locomotive may operate upon a track with the speed and safety of a canal boat, or persuade a complacent turnpike company that it is feasible to substitute steam for a Conestoga wagon, you are still confronted with conceptions of public railway control that fit only "the Toonerville trolley that meets all the trains." I view with apprehension that misguided belief that would divide the control of national transportation among 48 principalities or fatuously insists that we may starve our distributive service and insure its growth. The lessening consuming power of the transportation giant already reacts upon a thousand activities that fed its diminished appetite. If economic necessity drives from its exclusive service the great specialists who have ministered to its needs and multiplied its powers, it is the American people who will suffer.

From the shipper's viewpoint, what problem is more vital than an effective means to prevent the continually threatened interruption of interstate commerce through disputes between carriers and their employees? Within 35 years, four notable legislative experiments are represented in the Acts of 1888, 1898, 1913, and the Labor Board provisions of 1920. Stand-

ing in the shadow of the most serious effort to paralyze transportation since 1894, may we not inquire whether the nature and operation of the present method indicates that its theory and practical administration are best calculated to secure the object sought?

Two things are prerequisites of any plan. The one, an enlarged acceptance of social responsibility so indispensable to the security of our interdependent social life; the other, a resolute and effective enforcement of existing law against any and every combination that crosses the deadline of public safety.

Approaching the present plan, I criticize neither the personnel of the Labor Board nor its administration. I am concerned with a far more fundamental aspect of the matter, the principle of operation and the tendencies it is plainly developing. What is it that is sought? A practical means of protecting the paramount public interest in uninterrupted transportation, efficiently performed at reasonable rates. The method employed is arbitration through representative groups, compelling inquiry and delivering an opinion without penalty. This is not adjustment through a commission representing the public exclusively, but arbitration through groups representing the parties at interest in which the public element



is a minority. The Board is unrelated to the Interstate Commerce Commission. The primary determination of income and outgo is therefore the separated function of unrelated public bodies. The price of transportation is necessarily fixed by its cost, but the body fixing the price is not a participant in determining the cost.

These structural defects may be cured by amendment if it is practicable to establish a liaison between the Labor Board and the Commission. But a still graver difficulty lies in the nature of the plan and will become more aggravated with its continuing operation. The public is not concerned in every difference between management and men incidental to the employment relation, but only such as threaten a substantial interruption of commerce. The present Board, in 2½ years, has received 11,000 disputes, which means that in practical operation it deals not with irreconcilable differences of gravity but becomes a detailed and meticulous supervisor of every circumstance of working conditions, necessarily substituting the judgment of a public body for the discretionary authority of experienced management in contract, individually or collectively, with free men. If this means anything at all, it is practical substitution of government for private control under circumstances that do not make for economic operation. But, furthermore, the establishment of that morale, once the proud boast of every road, demands an intimate relation between management and men in accordance with their mutual agreement. But right employment relations cannot be manufactured by government and imposed from without. The experience of all industry teaches that they are a human growth that springs up only from within.

The issue then is, are we, as a matter of national policy, to permanently approve the meticulous regulation of the relation of railroad managers and employees, or urge government intervention only when their natural disagreements, arising out of their differing conception of private interest and public obligation, threaten the suspension of indispensable service. One method leads to a detailed governmental control characterized by all the essential aspects of ownership. The other gives free play to the origination and establishment of employment relations in accordance with the circumstances of each road as an independent unit of self-interest and transportation production and stops the assertion of group interest only when it approaches the deadline of public safety. It rests upon continuing enforcement by public authority, of public order, under every circumstance and upon every occasion and with all the weapons possessed by government under the long standing, clearly recognized limitations upon combined aggression.

Are we then left to the ultimate of compelled arbitration if the dispute reaches its crisis? Compulsory arbitration is the last resort of social self-defense. Why, therefore, not experiment within safe limits, with the protective sanction of an aroused and informed and therefore invincible public opinion? Suppose the President of the United States, whenever in his judgment, a dispute between a carrier and its employees threatens the movement of the mails, the free flow of commerce between the states, or the distribution of supplies essential to the Army and Navy for the national defense, halted the controversy and appointed, for the express purpose, a commission of not to exceed five impartial and qualified persons to investigate the causes and circumstances of the controversy and report their findings to him, to be made by him public. To preserve the subject matter of controversy and insure uninterrupted operation, it may be made unlawful for the parties to the dispute to strike or lockout until a reasonable time after the publication of the report of the President's commission. Thereupon, if the determination to concertedly but peacefully withdraw from the service of the carrier remains, it may be exercised after the taking of a secret ballot, under the supervision of a public officer, by the parties in association.

Ultimate intervention in the public interest may thus be secured under circumstances which, while protecting transportation from obstruction or stoppage, insures an inquiry into any dispute of substantial importance under circumstances which, riveting public attention upon the event, assure for the commission's finding attentive consideration and the establishment of an informed opinion. The period of delay intervening for permitted action assures a deliberate exercise of judgment under circumstances which excite the recognition of a condition demanding correction or the public condemnation of the withdrawal in terms so certain that it cannot endure.

## I. C. C. Declines To Take Charge of Car Distribution

WASHINGTON, D. C.

THE Interstate Commerce Commission has declined formally to take charge of car distribution under Paragraph 15 of Section 1 of the Interstate Commerce Law, as it was requested to do by the Washington Department of Public Works and others who have presented demands of the shippers of the Northwest for an increased car supply, on the ground that the commission deems such a step unwise and prefers, under the circumstances, to work in co-operation with the Car Service Division of the American Railway Association. The Car Service Division has recently taken steps to relieve the situation in the Northwest by issuing orders for the return by the eastern roads of cars of western line ownership, but in spite of this fact the commission has been urged, particularly by O. O. Calderhead, traffic expert of the Washington commission, and also by Senator Poindexter, to exert its emergency powers. On November 3 the Washington commission advised Mr. Calderhead, who has been in Washington in connection with the matter for several weeks, in effect to demand that the commission take direct charge. This was followed by a message to the commission on the subject from Senator Poindexter, to which the commission replied as follows:

"The commission deems it unwise formally to take charge of cars under sub-section 15. The effect might be to relieve carriers from responsibility and the commission is without the elaborate organization necessary to handle the subject in detail, and the time required to build up such an organization renders it practically impossible. The fact of the matter is there are not enough cars and motive power to go around and it is physically impossible wholly to relieve the situation. The directions of the Car Service Division of the American Railway Association are made after the fullest conferences with our representatives and we have the personal assurances of the executives of the affected carriers that orders will be observed. In fact our check shows car distribution is being made so far and fast as physical conditions permit. The demand made on carriers now is the greatest in history at this time of the year, with motive power only two-thirds in service as a result of the strikes."

The Car Service Division reports that the orders issued October 25 have been made effective on all lines and that the movement of empty western route cars to home lines is well under way. Although reports were not yet available from all lines, such as have been received indicate substantial progress in this direction. For instance, up to and including October 30, three New England lines delivered 371 western cars to connections for home, while six of the smaller lines east of Chicago report delivering 598. Two Kansas City lines report delivering 512 while six western lines delivered 1,618. In addition to the above an informal report from one of the larger eastern lines says that up to

the evening of the first it expected to have completed delivery at western junctions of 400 cars with approximately 200 more en route to be delivered within 48 hours.

Western lines have also received orders to expedite the return of cars belonging to eastern lines, by eliminating their use in local service and by loading either to home lines or terminal markets where there will be eastern loading to take the cars home.

The above orders have received rather wide publicity and the reaction to it has been very favorable in all sections of the country and at Washington. The entire movement is being closely watched by the Car Service Division with the view of obtaining the maximum performance.

Reports show an excessive number of open tops in New England, Michigan and the Northwest, and the Car Service Division is actively after the return of these cars. The heavy loading of coal is taking the cars into this territory in abnormal amounts.

Division Five of the Interstate Commerce Commission has approved the recommendation of the Federal Fuel Administrator that the use of open top cars be permitted for loading coke when consigned to public utilities or for domestic use.

P. J. Coleman, formerly assistant general superintendent of transportation of the Northern Pacific, has been appointed district manager of the Car Service Division of the American Railway Association with headquarters at Minneapolis, Minn. Mr. Coleman will have the authority of the Car Service Division in the territory to which he is assigned, which includes the terminals at St. Paul and Minneapolis, states of Minnesota, North and South Dakota, northern part of Wisconsin, and the state of Montana east of the Rocky Mountains.

## Valuation Questions Argued Before I. C. C.

WASHINGTON, D. C.

THE Interstate Commerce Commission devoted three days last week, November 1, 2 and 3, to hearing oral argument on questions as to various fundamental principles of its valuation work raised by the protests of the carriers to the tentative valuations served by the Bureau of Valuation in approximately a dozen cases. One of the chief points discussed was involved in the insistence of the carriers that the commission state the methods or process by which it arrives at the figures stated as representing the "final value" and particularly as to whether it should state only a value for rate making purposes or a figure which would represent the commercial value. Counsel for the railroads urged a valuation representing the latter type, while representatives of the bureau of valuation and of the state commissions urged the use of a "rate base" as representing the principal purpose of the valuation work, although some of them also expressed the opinion that the commission should state what considerations it had given weight to and what kind of a value it means in stating the final value. In the tentative valuations the question is avoided and the figure given is stated to represent value in accordance with the meaning of that term as used in the interstate commerce act. Several of the commissioners dissented from the opinion in the Evansville & Indianapolis case because it contained no analysis of the method by which the final value was arrived at.

W. G. Brantley, speaking for the Winston-Salem South-bound, asked of what avail it is when the commission has said that the value is so much and the company says it is so much more, if nothing is known as to the process by which the commission arrived at its conclusion. Leslie Craven, representing the railroad valuation committee, said that the

greatest danger is that there will be no exact definition of what the commission has done, that these points have been argued before the commission for years and no decision has been reached yet on one of the greatest economic problems before the country. The railroad lawyers took the position that the question of the value of a railroad property is a judicial and not an administrative one and that without a statement of the methods, which they said the act contemplated, the results published by the commission would be of little value. P. J. Farrell, chief counsel of the commission, although he opposed the railroads on other points, said that the time has come when the commission must say what it is doing and that if it is going to make no distinction between value for rate-making purposes and commercial value it will create a valuation that can't be used for any purpose. Mr. Brantley also pointed out that even if the valuation act when passed had contemplated a valuation for rate-making purposes the transportation act provided for several additional uses for the valuation. He also asked where is the constitutional protection if the commission has centered in it the two powers of making rates as its judgment dictates and determining values in the same way. If this is so, he said, the carriers are remitted for a remedy "back to politics, back to efforts, if you please, to bring about the appointment of a new commission, and things of that kind."

Edgar E. Clark, former chairman of the commission, appeared for the Tonopah & Tidewater and expressed views in general similar to those of Mr. Brantley regarding the finding of a single sum value.

J. M. Souby said that the bureau is proceeding in a circle in contending that there is a value for rate purposes lower than the commercial value of the same property, because, if so, the other value would be reduced. He argued that cost cannot be made the basis of a reasonable rate for the conveyance of passengers or freight.

While several roads have taken the position that their earning power should be treated as at least an important element of value, some of the roads represented at the hearing that have had frequent deficits took the position that their potential earning power should be considered or that they were at least entitled to the cost of reproduction of their property. Mr. Brantley said that if a road had earning power it should be given weight, but that at least its physical value should be considered.

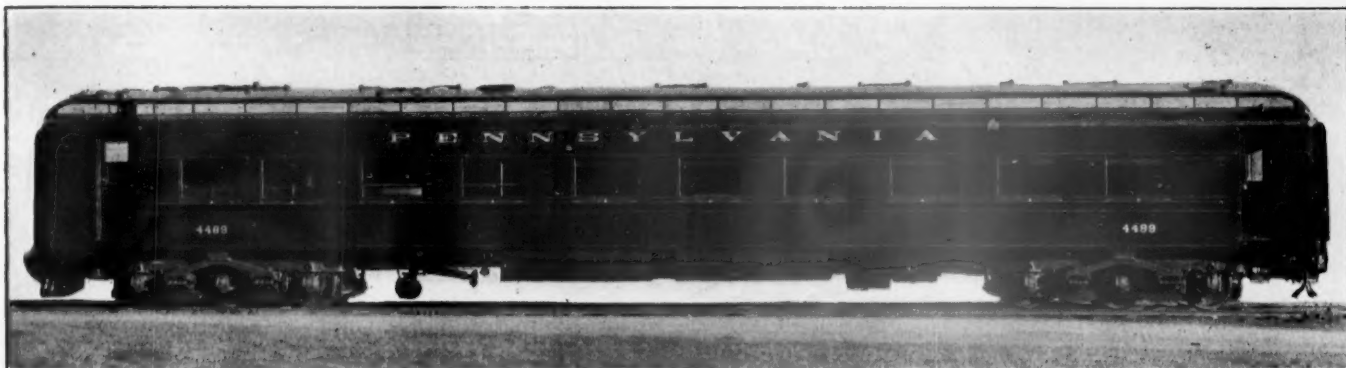
Attorney Matthews of the Western Pacific said that in a valuation for rate making purposes an argument based on earning power begs the question and that to take a new and undeveloped carrier and assume that its immediate earning power is a measure of its ultimate earning power would do it great injustice. He contended that the cost of reproduction is the essential criterion and he pointed out that the commission would not fix rates in relation to the valuation of the Western Pacific except as its valuation entered into the valuation of the roads as a whole used as the base for figuring a 5¾ per cent return. The purpose of the valuation, he said, is to afford a check on rate making, not an absolute basis for it.

In reply to this type of argument, Mr. Farrell said that when a railroad has a low earning power its valuation is not cut down on the basis of the earning power but on the ground of improvident investment.

Walker D. Hines, formerly director general of railroads, appeared on behalf of the Western Union Telegraph Company in opposition to the inclusion in the railroad inventory of contributions made by the telegraph company to the property of the railroad along its right of way.

Arguments were also presented by Sanford Robinson, for the valuation committee, C. W. Needham, P. J. Doherty and H. H. Hartman for the bureau of valuation and John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners.





Latest Type of Dining Car for the Pennsylvania

## Pennsylvania System Dining Cars Built at Altoona

Attractive Interior Finish, Kitchen Equipment, and Cast-Steel  
Truck Side Frames Features of Design

**T**WENTY NEW STEEL dining cars for the Pennsylvania System have just been completed in the car shops at the company's Altoona works. Structurally, these cars are the same as others now in service, having a strong built-up center sill with a cross-sectional area of 50 sq. in., and four cantilevers, two attached to each side of the center sills, spaced 18 ft. 9 in. from the transverse center line of the car, supporting the superstructure. No bolsters are used in this construction.

The sides below the window sills are designed to act as trusses and transfer the load to the cantilever supports, which in turn carry it to the center sill. The side posts, of the cantilever type, are made of  $\frac{1}{8}$ -in. pressed steel and extend from the bottom of the side to the deck plate, the lower

onals between corner and door posts. Standard diaphragms are attached to the I-beams.

The general dimensions are as follows:

Length over buffers.....	82 ft. 3 $\frac{3}{4}$ in.
Distance between centers of trucks.....	56 ft. 3 in.
Distance between centers of cross-cars.....	37 ft. 6 in.
Width over sides.....	9 ft. 10 $\frac{1}{2}$ in.
Width over roof.....	9 ft. 11 $\frac{1}{2}$ in.
Width over upper deck.....	7 ft. 7 in.
Height from rail to center line of coupler.....	34 $\frac{1}{2}$ in.
Height from rail to top of platform.....	50 in.
Height from rail to car floor.....	52 in.
Height from rail to eaves lower deck.....	11 ft. 2 $\frac{3}{4}$ in.
Height from rail to eaves, upper deck.....	13 ft. 3 $\frac{1}{2}$ in.
Height from rail to top of roof.....	14 ft. $\frac{1}{2}$ in.
Seating capacity.....	36 persons
Weight when fully equipped with ice, coal, water and supplies.....	160,000 lb.

The air brake is the Westinghouse type UC-1812, without



Cast Steel Side Frames Reduce the Weight of the Truck and Decrease the Number of Parts

deck roof sheets,  $\frac{1}{16}$  in. thick, being riveted directly to the posts. The deck plate is  $\frac{1}{8}$  in. thick and the upper deck roof sheets are  $\frac{3}{32}$  in. thick. The roof sheet joints are welded.

Vestibules have been omitted since passengers enter the dining cars only from adjoining cars. End protection against collapse is of the same strong construction used in all Pennsylvania System steel passenger equipment cars, which for non-vestibule cars consists of one 12-in. I-beam on each side of the doorway and two Z-bars, one 4 in. by 8.2 lb. and one 3 in. by 6.7 lb., at each corner, with pressed steel diag-

the electro-pneumatic attachments, although this feature can be readily applied as the wiring has been installed.

The cars are heated with vapor, having a thermostatic control and may also be operated manually, the thermostat being located at the center of the car between windows.

The lighting effect is very satisfactory, semi-indirect lights being used, one over each pair of tables. Each fixture contains a 100-watt lamp, which makes a very efficient light. Between each pair of lamps is an electric fan with an air deflector or distributor, which produces a movement of air at intervals of about 20 times per minute. This feature of in-

termittent breeze eliminates the steady gust of air common to many types of electric fans.

The draft gear is of the Westinghouse type N-11 with attachments for cheek castings at least 25 per cent stronger than the A. R. A. requirements for freight cars. The tail yoke is cast steel with quadruple shear attachment to stem, which has the latest A. R. A. type D head.

The trucks are of the six-wheel clasp brake type and have a wheel-base of 11 ft. 0 in. The axles are of the special Pennsylvania System type with 5½-in. by 11-in. journals, and the wheels are rolled steel, 36 in. in diameter. The general scheme of the trucks is the same as used on all former Pennsylvania System cars, the bolster being of riveted plate construction, which has been exceedingly satisfactory on previous cars. It was designed to flex readily in a horizontal plane, but is rigid against transverse and longitudinal strains.

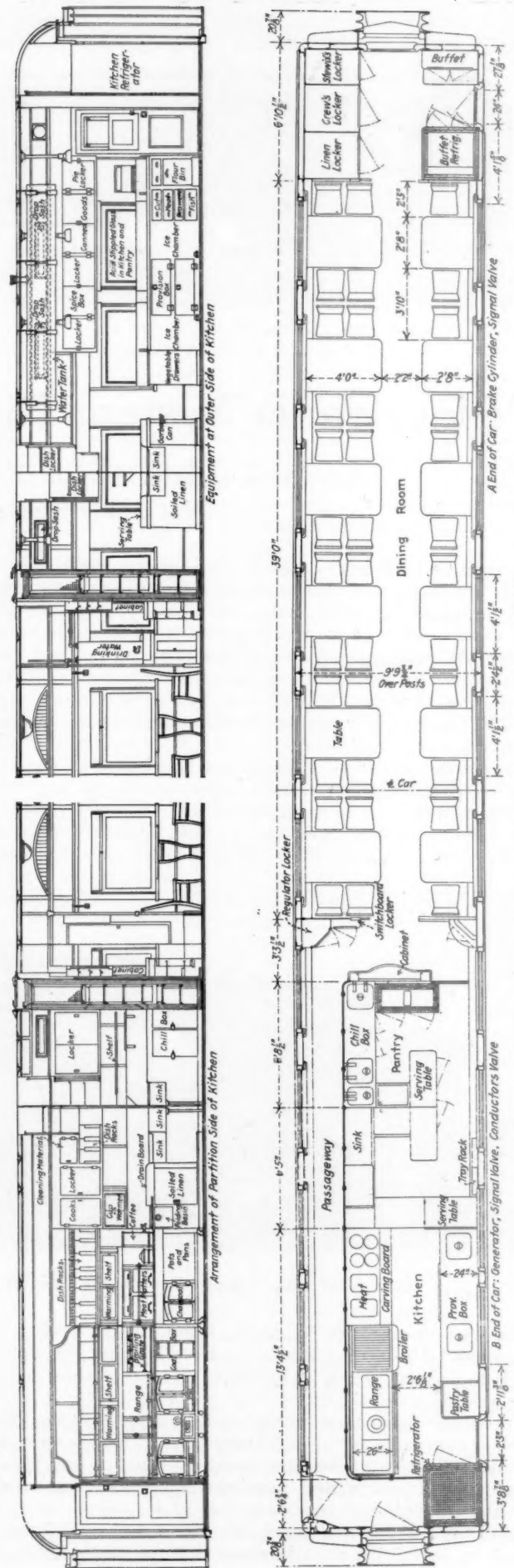
The bolster is supported on sets of quadruple elliptic



The Interior Is Finished in Olive Green

springs, one set under each end of each spring beam. The equalizers supporting the elliptic springs have one end hung from the truck frame, the other being attached to an inverted U-shaped equalizer and hanger combined, which rests on the helical spring located over the center journal box. The helical springs are supported directly on the journal boxes which in turn are guided as usual in pedestals. It will be noted that this arrangement results in having the least possible non-spring-supported weight and, therefore, the least possible kinetic effect on rails. The principal feature which differs from the old trucks is the side frame.

The older trucks had side frames built up of channels, cast steel pedestals, spacing pieces, cross-braces, etc. In the new truck all of these parts are combined into two cast steel frames, one on each side, connected flexibly by only two 2-in. transverse rods, located respectively between the center and each end axle. Each frame can, therefore, readily adjust itself, independently of the other frame, to meet track irregularities. Also, since the bolster is flexible in a horizontal plane, it in turn can adjust itself to the various positions taken by the side frames and, being rigid longitudinally,



Plan of Pennsylvania Diner and Elevations, Showing Kitchen Arrangement



holds the side frames in correct transverse alinement. The cast-steel side frames were designed to be interchangeable with the old built-up side frames so that when repairs are necessary to old trucks the cast-steel frames, which weigh less than the built-up frames, can be substituted. The total weight of each truck is 23,000 lb.

The interior of these dining cars is arranged so that there is a large dining room, seating 36 persons. They are finished in plain mission style of architecture, the walls being painted a medium shade of olive green with striping of a darker shade of green edged with gold. The ceiling is cream color striped with dark green. The carpet and curtains are of a green shade. The color of the side walls is unique and has been the subject of many complimentary remarks from passengers.

At one end of the dining room are located the linen lockers, crew's lockers and steward's lockers, while on the opposite side of the passage-way is a large refrigerator with a humidor used by the steward for mineral waters, etc. There is also at this end of the car a buffet for the use of the steward.

At the other end of the dining room the pantry and kitchen are located. These are arranged especially for quick service, the kitchen and pantry being in one without a partition between them as is usually the case; this permits the waiters to enter the kitchen and allows more freedom for the men.

The kitchen and pantry have a number of special features, such as a water filter for filtering all water used on the tables, and separate coolers for milk, cheese, butter, meats and fish.

## Hearing on Disposition of Central Pacific

WASHINGTON, D. C.

**O**RAL ARGUMENTS were held by the Interstate Commerce Commission at Washington on November 4 on the petition filed by the Union Pacific asking the commission to dismiss for want of jurisdiction the application of the Southern Pacific, which had been set for hearing on November 21, for authority to retain control of the Central Pacific by stock ownership and by lease pending the completion of the commission's plan of consolidation. In a general way, counsel for the Union Pacific based their arguments on the contention that the jurisdiction of the case is with the United States court for the district of Utah, which was directed by the Supreme Court to prepare a decree for the separation of the Central Pacific and the Southern Pacific and that the Supreme Court has decided that control by the Southern Pacific is contrary to public interest. On the other hand, the contention of the Southern Pacific was that the court had not attempted to deal with the situation created by the transportation act because it lies within the administrative functions of the Interstate Commerce Commission, and that the commission, therefore, has jurisdiction over its application and should certainly allow a hearing on it. The Union Pacific's argument was presented by H. A. Scandrett, commerce counsel; N. H. Loomis, general solicitor; C. C. Dorsey, general attorney, and Edgar E. Clark, formerly chairman of the Interstate Commerce Commission, while the Southern Pacific was represented by Fred H. Wood, commerce counsel; J. P. Blair, general counsel, and Max Thelen, who was formerly chairman of the California Railroad Commission.

Mr. Scandrett began the argument for the Union Pacific by reading from the Supreme Court decision, which held that the Central Pacific and the Southern Pacific were competing lines and directed the lower court to prepare a decree severing the control by the Southern Pacific. Commissioner Potter asked if it was his claim that the commission may not ultimately award the Central Pacific to the Southern Pacific

in a consolidation plan. Mr. Scandrett said that it was not necessary to argue that point now, although, in his opinion, the commission may not do so, as the Supreme Court has held that the control by the Southern Pacific is contrary to the public interest. Commissioner Meyer asked if the commission might not at least hear the application of the Southern Pacific, to which Mr. Scandrett replied that if it appears that the commission would have no authority in law to grant the application time would be wasted in holding a hearing. He said the commission is asked to exercise an extraordinary power—to nullify a decree of the Supreme Court. If that power is conferred by the law it must be done only in express terms. Unless the commission can say at this time that the inclusion of the Central Pacific in the Southern Pacific system will be in accord with its final consolidation plan, he said, it cannot entertain the application now. In reply to a question as to whether the commission could not afford the temporary relief asked by the Southern Pacific, Mr. Scandrett said that the relief asked is not temporary and that the commission cannot say what will be the best plan of consolidation until it reviews the entire field. Commissioner Hall pointed out that the court acted under the Sherman law, while the commission is to act under the new law. Mr. Scandrett said the court was presumed to know of the transportation act and, in fact, the consolidation provisions were called to its attention in argument, so that if it had wanted to it could have referred to the situation created by the new law in its decision. Mr. Scandrett contended that the control proposed by the Southern Pacific is in effect a consolidation, although authority to approve a consolidation in advance of the final plan is expressly withheld from the commission in paragraph 2 of section 5. The roads are now consolidated into a single system for ownership and operation and only the further step of conveying the property to the Southern Pacific could make the consolidation more complete. The Southern Pacific, he said, is asking the commission to perpetuate a control which the Supreme Court has said now constitutes a practical identity of the properties.

When Commissioner Potter asked if the Supreme Court has foreclosed the question of the public interest, Mr. Scandrett said that the jurisdiction of the district court is exclusive until the decree is carried into effect and it is the duty of the district court in preparing a decree to make arrangements for joint use of terminal properties, etc., which would require a long time. Unless the commission finds that the Central Pacific should be included in the Southern Pacific system, the court proceedings must go on. When Commissioner Hall asked what effect an order of the commission could have on the court, Mr. Scandrett said that he was not in the confidence of the Southern Pacific, but he guessed it would show the order to the court and ask it to stay its hand. He argued, however, that until the court proceeding has reached a finality, the commission should not interfere with the subject matter; otherwise there would be an unseemly conflict of jurisdiction resulting from a court order directing a separation and an order of the commission allowing control by the Southern Pacific. Commissioner Meyer asked how the commission can find what is in the public interest until it hears the evidence. Mr. Scandrett replied that that is *res adjudicata*. Even if the Supreme Court decision is not conclusive, Mr. Scandrett said, it precludes a finding of the commission in advance of its final consolidation plan that such a consolidation would be in the public interest and until there is a separation in accordance with the decree there is no way in which the Central Pacific can have a voice in the matter because its directors are selected by the Southern Pacific. When Mr. Scandrett asked if briefs would be allowed to be filed, Mr. Wood, on behalf of the Southern Pacific, entered a vigorous protest, saying that the whole purpose of the Union Pacific was to

cause delay, but the commission ruled that briefs might be filed within seven days.

Mr. Loomis discussed the bearing on the case of the Pacific railroad acts, which contemplated a continuous through line from the Missouri river to the Pacific coast, although the line was built by two separate companies. The law provided, he said, that neither company should discriminate against the other in the handling of through traffic and, therefore, the Union Pacific is barred from building or acquiring a line of its own to San Francisco to handle freight which would otherwise go by the Central Pacific. But, he said, the Central Pacific cannot possibly treat its partner, the Union Pacific, fairly, because it is under the domination of the Southern Pacific. The Pacific railroad acts constitute a three-party contract between the government, Central Pacific and Union Pacific, which cannot be impaired. He did not claim that the Central Pacific should be given to the Union Pacific, but merely that it cannot be given to the Southern Pacific because the Southern Pacific would be "bound to operate it in its own interest."

Mr. Clark said that the consolidation provisions of the transportation act, except the clause relating to the express company, speak for the future and give no power to the commission to approve an existing consolidation. The commission's approval of the Southern Pacific application, he said, would be based only on a tentative finding of the public interest and would involve a breach of comity toward the Supreme Court. Commissioner Aitchison asked if the commission does not have a mandate from Congress to carry out the provisions of the transportation act, to which Mr. Clark replied that the law gave it power only to deal with a control not then in existence. When Commissioner Hall referred to the case in which the Pennsylvania was allowed to lease the Panhandle, Mr. Clark said that different facts and circumstances existed, but Mr. Hall asked how the commission was to get at the facts without a hearing. Mr. Clark also pointed out that the commission has no power to require a consolidation and that the Central Pacific could refuse to consent to any plan of consolidating it with any other company, and under Southern Pacific domination, he said, it could not give any independent assent to any plan. He also made the point that the Southern Pacific is not in lawful possession of the stock which it has voted to assent to control of the road by the Southern Pacific.

Mr. Wood said that counsel for the Union Pacific had presented the kind of arguments that would naturally follow the presentation of evidence on the merits instead of on a motion to dismiss. The sole issue, he said, is the question of public interest, and for the purpose of the present argument the allegations of the Southern Pacific petition as to the harm that would result if the roads were to be separated must be taken as true. He pointed out that motions to intervene on behalf of the Southern Pacific have been filed by the state authorities of Utah and Nevada and by a statewide committee representing commercial organizations of California, all of which say that the granting of the Southern Pacific petition will be in the public interest.

Mr. Wood also contended that the Southern Pacific does not seek the continuation of the existing status. It seeks control of the Central Pacific by a valid lease and a lawful stock ownership, whereas, according to the opinion of the Supreme Court, it has never been in lawful control of the Southern Pacific. As to the effect of the Pacific railroad acts, he said that the unreversed decision of the district court that the provisions of those acts could be carried on by the Southern Pacific as lessee of the Central Pacific, as well as by the Central Pacific itself, stands as the law of this case and that the control of the Southern Pacific is in no way violative of the Pacific railroad acts. The Supreme Court, Mr. Wood said, did not pass on any issue arising

under the transportation act, because there was none before it and could not be until the commission exercises its administrative jurisdiction and the court has something to review. The commission and the commission alone is empowered by the act to bring about a relation between railroads in harmony with the new policy of Congress. When Commissioner Potter asked what would happen if the commission should award the Central Pacific to the Union Pacific in a consolidation plan and the Southern Pacific should prevent such a consolidation by asking \$500 a share for the stock, Mr. Wood replied in that case the commission could terminate its lease.

The Southern Pacific's belief, he said, is that if the properties are separated the quality of public service will be impaired and harm done both to the public and to the Southern Pacific, but he realizes that the commission should not now authorize a form of control that would be any barrier to the consummation of the commission's final plan. He said the Union Pacific probably hopes that if the commission shall refuse jurisdiction and the district court requires a sale, the Central Pacific will fall into the hands of people who will never sell it back to the Southern Pacific at any price that would be approved by the commission. On the other hand, if the commission should grant the Southern Pacific's petition, the disposition will be in its hands. If the separation were to take place and the commission should subsequently grant authority to the Southern Pacific to acquire the road, it would have to pay much more for it than it would get for it at a forced sale. He also contended that the form of control proposed by the Southern Pacific does not constitute a consolidation any more than other cases where the commission has authorized leasing of roads which are already controlled by stock ownership.

Mr. Blair said that Congress had not attempted to tie the Union Pacific and the Central Pacific together any closer than by the requirement of physical connection and non-discriminatory treatment. As long as there is a thorough, unimpeded transportation route, the public is not concerned with where one road begins and the other ends. He said that the sending of more freight over the Southern Pacific by the El Paso gateway is not a discrimination prohibited by the Pacific railroad acts. When Commissioner Potter referred to the Union Pacific-Southern Pacific dissolution plan which provided for the sale of the Central Pacific to the Union Pacific, Mr. Blair said that that was a plan which the Southern Pacific had had to consent to at a time when "a club was being held over its head in one hand and a bribe was held in the other."

Mr. Thalen denied that the doctrine of comity prevails as between the judicial and legislative branches of the government and said that the commission is a representative of Congress. The case before the commission, he said, does not have a similarity of purpose, subject matter or relief to that before the court because the public will be represented before the commission but not before the court. The only remedy available to the court, he said, is to tear apart; the commission may keep the properties together. If the commission is in doubt, he said, it should decide in such a way that the representatives of the public may have a chance to be heard and he referred to the petitions filed by the state authorities and commercial organizations of California, Nevada and Utah.

H. W. Prickett spoke briefly on behalf of the state of Utah and the chambers of commerce of Salt Lake City and Provo, asking that the commission give an opportunity to be heard on the Southern Pacific's petition, and the concluding argument for the Union Pacific was made by C. C. Dorsey, who said that if the Supreme Court had expected the Interstate Commerce Commission to interfere with the separation it had ordered it would have made some provision for it in its mandate.



# Two Points of View on Employees' Relations

## Officers and Employees Should Be on More Friendly Basis—The Value of System Athletics

**T**HE *Railway Age* drive on the necessity for improving relations between the managements and the employees has brought many expressions of interest and commendation to the Editor's desk. Two of these, incorporated in this article, are of special interest—both are based on actual experiences and both are thought-provoking and constructive.

The contribution from Ward W. Adair focuses out into clear relief one of the fundamental reasons for the misunderstandings which are the rule rather than the exception on many roads. The mere fact that this condition is allowed to continue to exist is because its very existence is, or has been, largely overlooked; at least its great importance has not been recognized. Mr. Adair, by the way, is a keen student of human nature. He is one of the most successful of the Railroad Y. M. C. A. secretaries and has had special opportunities—as a neutral—for studying the relationships between managements and men on American railroads. Incidentally, he knows how to express himself in writing and make his point clear.

The second contribution—that from Leander H. Poor—is equally striking. Mr. Poor is a student at the Massachusetts Institute of Technology and has spent two summers in the service of the Pennsylvania Railroad. The article was originally written in connection with his college work after his first summer on that road; it was revised this fall on the basis of his more extended experience and observation. While it relates largely to the value of a system athletic program, reading between the lines it goes far deeper into the big and complicated problem of employees' relations on the railroad.

### An Incident and a Suggestion

By Ward W. Adair

Executive Secretary, Railroad Branch Young Men's Christian Association of the City of New York

The vice-president of an Eastern railroad sat at his desk wrestling with the great transportation problems that occupied each waking hour, when the clerk laid a letter of introduction on his desk. He read it, then reread it, and pondered. The thing that gave him pause and pain was that an outsider was introducing him to one of his own men.

"Show him in," he said to the clerk.

The man entered and was cordially greeted by his superior officer, who listened patiently and sympathetically to the story of a personal injustice of several years' standing, which had greatly worried the employee, but which in the presence of his kindly disposed superior was straightened out in five minutes. Happy over the outcome, the railroader rose to go, and as he did so, the vice-president held out his hand and bade him goodbye.

#### LETTERS OF INTRODUCTION NOT NEEDED

"And now," said the official, "let me urge upon you that if you ever have another such incident in your life, you will come to me without any letter of introduction. We both belong to the same great railroad family, and you have as free access to me as to any other man in our employ. It makes me feel a little badly to think that one of our own men should go to an outsider to get a letter of introduction to me, and I want our men to feel that no such ceremony as that is necessary. Whenever anything is wrong, feel per-

fectly free to come to me and we will talk it out together."

This story is not a figment of the imagination, for it actually happened within the past year, and it is highly interpretative of a regrettable situation that has grown up within the last decade. A gradually developing feeling of estrangement between officialdom and the men of the rank and file has been observed and deplored by many thinking people who are at once friends of the railroad companies and of the men who work for them.

To a certain extent, the condition is the result of rapid growth, and it frequently is the penalty that is paid for quick development. In the organization served by the writer, where the membership has grown from 1,500 to 5,000 within a comparatively short time, it is altogether possible that a member might seek a letter of introduction to the executive, for the very reason that the larger family is more unwieldy and more difficult to know than the smaller one. In such an organization as the railroad company, however, the lack of personal acquaintance breeds grave misunderstandings and misapprehension. The "stove pipers" are much given to derogatory conversation. Many of them are accomplished knockers, and it is a well known fact that a knocker needs neither mental capacity nor training in order to become an expert. When a group of this kind get together, and none of them have any personal acquaintance with their superior officers, they are great breeders of dissension and distrust. If they knew some of the men at the top, and knew how thoroughly human the most of them are, such knowledge would greatly temper their conversation, but they draw on their imagination for qualities that really do not exist, and they have no scruples about doing the man an injustice.

#### HUMANIZE THE RAILROAD

Now, the antidote to this whole situation is in the get-together idea. The human element in railroading is first of all human. Wives and little ones of the section hands are just as dear to them as the wives and little ones of the president and general manager are to them. There should be mutual understanding, mutual sympathy, mutual acquaintance. The humanizing of the whole railroad situation is one of its most crying needs.

A big machine looks terribly heartless at times to the fellows down at the bottom. If they are not careful they will find themselves conjuring up visions of high salaried and unfeeling men who care nothing for their struggles and problems. As a rule, nothing is farther from the truth, but in order to dispel these erroneous ideas, officials should be ready and eager to avail themselves of opportunities to meet their men in social fellowship, man to man.

In the writer's 30 years in a branch of the railroad service that provides a common meeting ground for the men and the officials, he has had a varied experience. Certain railroad officials stand out in memory as those who always had "a previous engagement" when an opportunity was given them for an evening with their men. Certain others, and these I am thankful to say have been in the majority, have shown an appreciation of such opportunities, and have cancelled engagements, and inconvenienced themselves in order that they might seize upon opportunities to further friendly acquaintance with the employees. The vice-president above cited is a conspicuous and refreshing example of this latter class, although even he was in danger of being misunderstood by one of his own men.

It was my lot to listen not long ago to an address on the

subject, "The Human Element in Railroading." The speaker had not talked five minutes before it was patent to any thinking man that he had overlooked the pivotal fact that the human element in railroading is, first of all, intensely human. It is the appreciation of that fact that will engender good feeling on the railroad, and it is the ignoring of it that will work infinite and irreparable harm. The employees of any railroad should be one big, happy family, with plenty of "family reunions," where everybody would get to know everybody else in a great human way. We are constantly progressing toward it, and only the slow of heart lag behind the procession.

## Place of Athletics on the Railroad

By Leander H. Poor

"What's all the shootin' for?" With these words the stable man in George Cohan's stage success "The Tavern" introduced himself. "What's all the shootin' for?" seems to neatly express the public's attitude in our ever recurring industrial disputes. The "shootin'" is all because the two factions, labor and capital, cannot agree. That much is evident. But why can't they agree? Each side mistrusts the other. Neither party wishes to retrench. Such has been the general attitude in the past. But today, industries, individually, are awaking to the fact that both capital and labor are indispensable to successful operation. And coincident with this awakening comes the further realization that a closer co-operation between these two necessary factors will net both of them greater returns. But that this principle has been successfully applied to one of the largest railroad systems in the country may come as a surprise. Indeed, taking the public at large, the much too general impression of a railroad is a complex organization which conveys one at its convenience from starting point to destination. The conductor who takes one's commutation ticket is carelessly looked on as being scarcely more human than the machine which gurglingly swallows nickels and dimes in the subway; the engineer and fireman, as only necessary adjuncts to that complicated, wheezing giant out front, which somehow gets one home at night; the shopman, as a bolshevist in disguise, and the official as the cartooned plutocrat, who sits back in a plush chair and snarls at his cringing subordinates. But the realization, by railroad officials and the public, as well, that the railroad organization is made up of individuals every bit as interested as the rest of us is coming.

### RAILROAD ORGANIZATION MADE UP OF INDIVIDUALS

The officials of the Pennsylvania System have long since come to this realization. The results from it were brought home to me today as I watched the Eastern Pennsylvania Division elimination contests in track, field and swimming events, as well as in tennis, trapshooting, quoits, tug-of-war, golf and baseball. In a most beautiful setting in the mountains of central Pennsylvania are the Pennsylvania Railroad athletic grounds at Tyrone. As I sat looking across the greensward of the baseball field, the cinder track and the tennis courts to the swimming pool, and the golf links beyond, I asked myself, as you would have, what has a man rightfully to complain of when he has all this given to him to use as he so desires?

And my mind turned back to a day late in September, 1921. The scene was in eastern Ohio—"The Twin Cities" they called themselves—Dennison and Ulrichsville—and they had been chosen as the scene of the Second Annual Pennsylvania System Field Day. Almost before daylight I had been awakened by an unusual commotion. In the station the first "Special" had arrived with its load of enthusiastic rooters from Philadelphia. Before it had pulled out into the yards another pulled in from St. Louis, then one from New York, then one from Cleveland, and so on, until, by

the middle of the morning, the little towns were fairly swarming with ruddy faced variously tagged but unanimously zealous supporters. All morning long a cheerful mob drifted toward the green field and white bleachers at the foot of the street. Meanwhile the preliminary and elimination contests were being run off in the green carpeted arena, accompanied by the intermittent barking of shotguns, as the trapshooters pulled away on the blue clay pigeons in the meadow behind the east stands.

By noon, the sun in a spotless blue sky, shining through an atmosphere such as exists only after a recent rain, lent its warmth to the enclosure, while its rays were reflected from the gigantic red keystone on yonder hill with its P. A. C. (Panhandle Athletic Club) emblazoned in gold letters. By this time the movement to the field had become general, and there was a steady stream of delegations marching on to the field, each led by its band. At one o'clock the stands were jammed and the field was well cleared of all but contestants and field day officials. Bands kept the air aquiver with blatant notes of popular songs. Good humored jibes floated back and forth between stands and field, while events were run off with a dispatch and precision that might well be copied in collegiate competition.

The sun was setting as the last inning decided the West victor over the East in the first of the three-game "Railroad World Series." And then the rush for the waiting trains began. In the rapidly advancing dusk the medals were awarded, by the manager of the Central Region, Vice-President J. A. McRea. And finally with the perfect order with which we like to characterize good railroad operation, the 20 trainloads of employees and officials, 25,000 in number, were cleared of the Dennison station, while the individual passengers sought what rest they could get as the clickety-click of wheels on rails stepped off the miles toward home.

### HOW THE WORK IS ORGANIZED

This field day at Tyrone today was the first of two elimination meets in preparation for the Third System Field Day. These elimination contests are based on the geographical divisions of the system. Each superintendent's division has a team which is picked by the divisional chairman of athletics, his choice being based on the showing of the individual candidates in practice, time for which is granted by the company. These teams compete in the grand division meet, one of which was the meet at Tyrone today. The qualifiers, the first four in each event, or the winning team, in these meets represent the grand division in the regional meets, where in a similar manner the regional representatives for the system meet are qualified. This plan is satisfactory in every respect; there are thus about five teams competing each field day. The general plan had its birth in 1916 on the then Pennsylvania Lines East (lines east of Pittsburgh), with the expectation of extending the scheme over the entire system if it proved popular. The war and government control interfered with the immediate expansion, but competition was continued through 1918 and 1919 on the lines east, or as it had come to be known, the Eastern Region. In 1920, with the return to private control, the First Annual Pennsylvania System Field Day was held on the Cricket Club grounds (P. R. R.) at Altoona, Pa. It proved beyond a doubt the success of the plan and the added interest shown in the Second Annual Field Day, held at Dennison, Ohio, last fall insures its continuance as a leading feature in the welfare program in years to come.

This success has been possible only through the generous help of the management in establishing first-class athletic grounds and equipment at important division points, such as Philadelphia, Tyrone, Altoona and Columbus in connection with its already excellent Y. M. C. A.'s. Athletic directors were placed in charge of the well equipped gym-



nasiums, use of which was encouraged among the employees. The organization, once decided upon, was placed in the hands of competent workers. It is based, like the competition, on the geographical and traffic divisions of the system. At the head there is the chairman of the system athletic committee, who is directly responsible to the management. Responsible to him are the regional chairman, under whom are respectively the grand divisional chairman, and the superintendent's divisional chairmen. Too much cannot be said in praise of these chairmen. Their enthusiasm is an example to college coaches and their confidence in the future success of athletics on the Pennsylvania is an explanation of the extraordinary development of the plan in the past. "The biggest athletic meet in history" is their slogan for the System Field Day at Altoona\* this fall.

#### IS IT WORTH WHILE?

After the difficulties and expenses experienced in procuring extra service, arranging for conventions, etc., one may well ask, "Is this all worth while?" The most direct and conclusive answer is that if it were not, the Pennsylvania System would not be doing it. As a matter of fact, the cost to the railroad is comparatively small, consisting only of the extra transportation facilities, and the time lost away from the job. That the scheme is actually worth the expense is apparent in the general attitude of the employees. The immediate effect is the same that athletics have on college life, a wholesome diversion from the monotonous routine of daily affairs.

A day or so away from the old grind and each man comes back to his job on Monday morning refreshed and with something to talk about besides reduced wages and the faults of the management.

Particularly among the younger men is the effect beneficial. The young men have entered the railroad service in answer to the appeal that railroading still holds for many of us. In their daily work they come to feel infinitely remote from the guiding forces at the head of the organization. The labor union organizers work on these young men with their usual collection of arguments, tending to instill the principle of the union first, the railroad afterward. The eventual result of such persistent hammering on the youthful mind can lead to but one result: the detriment of the man's effectiveness. But see how the field days arrest the intent of this poison. Here is the railroad willing to give the man time off to play, not idle play, but play by which he can get his name or picture in the local paper, by which he can become known among his fellows. So the railroad is trying to flatten out his pay envelope, is it? Well, at least, he is getting a good time out of it, rather better all around than his school chum who is selling neckties in the haberdasher's shop. Then on the field he meets the general manager or a vice-president, or a superintendent, or even his own boss, who comes up to him, grabs him by the hand, and calling him by name, compliments him on his performance. Are these the niggardly tightwads the union agitator has described? He should say not! At least, not so he can notice it! That friendly recognition is going to be remembered, every word of it. And it has not hurt the official. It is a man's frank recognition of another man's honest work. For the time being, he can forget his office and be a man among men. Yes, that handshake is worth the man's wages to the management, for it means a step toward permanency in the working force.

Then perhaps to a lesser extent, there is the feeling of sectional rivalry which springs up out of this field day. These fellows the competitor meets are good sports and all that, but they aren't like the home bunch. Or it may be—see their roadbed, not much as it is on his division—or the engines, not quite like the baby he and Jim were pulling down yesterday, and so it goes. The effect on the spectators

is much the same. "Good stuff these fellows have here but they can't travel fast enough to beat our bunch," or "The luck was with them this year, but we'll show 'em next year and you can bet I'll be on hand to see 'em do it."

#### CULTIVATES GOOD-WILL

So much for the immediate effects of the field day, but what about the ultimate result of the continuance of the plan? It looks to me like a solution to much of the unrest in the labor situation of today. I firmly believe it builds for a better understanding between the management and the employee, because it is founded on good-will. If not a cure-all, it is a potent combatant of the disastrous effects of radical labor agitation. If anything will build for democracy in the industry, certainly here is a means—effective because of its universal scope on the system. The fireman, the mechanic, the apprentice, the draftsman, the clerk, the conductor, the office boy, and the official are mingled for a day in equal footing. If collective bargaining, or any kind of wage agreements, can be made between labor and management without outside interference, here is a way for both parties to discover to themselves their respective places in the industry.

Across the conference table, as on the field, they can meet as man to man, no longer as lord and slave, each mistrusting the moves of the other.

Organization is not perfect by any means; very few human creations are. Grumbling and discontent cannot be stifled; they are bound to exist. Discontent with conditions as they were has brought civilization ahead as far as we have come. But discontent and grumbling to the extent of hindering progress is disastrous and I believe the ultimate result of the System Field Day will be to reduce these necessary evils to their proper status. It is coming, I feel sure. The employee is a true man at heart, and as soon as he has recovered from the Arabian Nights dream he enjoyed under the Railroad Administration, he must, and will see that field days, trades picnics, welfare lectures, employee ownership of company stock, and the employee benefit associations fostered by the railroad are not tools for prying more work out of him for a smaller wage, but are methods of showing the management's interest in making the man worth more to himself as well as to the company. What can result but an increasing loyalty to the industry and a desire in the man to show his appreciation, by increasing the returns from his own labor?

Such are my conceptions of the possibilities in the results of field day. I find the whole idea aptly summarized in an editorial referring to the system meet of 1921 by Cullen Cain, sports editor of the Philadelphia "Public Ledger" in its issue of September 30, 1921. I quote in part: "Athletic and competitive sports are best of all to promote better and friendlier feelings and to create a pride in the firm or institution in the hearts of employees. It might be said now that the sports idea among great business and industrial institutions is universal. But this system meet of the Pennsylvania, the second annual affair of its kind, by the way, is a sports promotion on a tremendous scale. To furnish a gym for the workers is very fine, and to lease a baseball grounds and even go 40 miles from town to play a rival is fine also. *But when the conservative old Pennsy system assembles its children from the Atlantic seaboard to the Mississippi shore by the thousands in an Ohio town for a competitive meet on such a scale as this Dennison affair, then it is time to scratch all piker entries, enlarge the grandstand, build some more bleachers and issue a new catalogue embellished with the royal seal. It is also time to think.*

"What do sports mean to workers and their children? Some day the answer to this question may amaze the world."

In the foregoing I have attempted to outline my conception of the field for athletics in one industry.

\* See *Railway Age*, September 30, 1922, pages 597 and 607.

## Signaling Busy Terminals

By T. Holt

Signal Engineer, Chicago Union Station Company, Chicago

**T**RAIN SPEED in congested terminal territory must of necessity be retarded. The current of traffic is in both directions on all tracks, with train movements deflected over crossovers and turnouts which are arranged for a multiplicity of routes. There is little need of high speed signals, but a great need for a system of signaling which will permit train movements at the maximum authorized terminal speed when the route set up is unoccupied. Such a system should also provide an indication for retarding train movements to a speed which allows them to follow each other with safety to occupied tracks.

Two general schemes of signaling have been used on the important terminals in this country, one a dwarf signal scheme with dwarfs operating in three indications; the other a two-arm high signal scheme using four indications, usually known as special terminal signaling.

With the dwarf signal clear, information is conveyed to the engineman to proceed at maximum authorized terminal speed, that the track is clear to the next signal, which is either at clear or caution. The dwarf signal at caution indicates that the next signal is at stop and the track between the caution and the stop signal may or may not be occupied. The stop indication gives information that the route is not set. These three indications are considered by some operating officers as giving sufficient information for the proper governing of traffic on a busy terminal. However, other operating officers feel that information should be given as to whether the track ahead is occupied when a caution signal is displayed. This has led to the adoption of special terminal signaling on some important terminals.

The top arm of the two-arm high signal in special terminal signaling has three indications and is used to govern to all routes, showing clear when the track is clear and the next signal at caution or clear; showing caution when the track is clear and the next signal at stop and showing stop when the route is not set. The bottom arm has but two indications, one in a proceed indication in combination with the top arm at stop which shows that the switches are set for a route which is occupied. The other is a stop indication in combination with the top arm at stop which shows that the switches are set for a route which is occupied. The other is a stop indication in combination with the top arm at stop, which indicates that the route is not set.

The unusual use of the top arm to govern to all routes is based on the assumption that the maximum authorized speed in the terminal territory is the safe speed for all turnout and crossover movements. This same assumption makes it possible to move trains at the maximum authorized terminal speed by dwarf signal indication.





The chief advantage derived from the use of special terminal signaling is the information as to the occupancy of the track ahead. This not only quickens the movement on a caution indication but makes follow-up moves safer. The information is clear and definite and no indication can have two meanings.

The chief disadvantage is the difficulty of placing signals at the proper points to allow the tracks to be used to full capacity, as the complicated track layouts with crowded clearances usually found on important terminals make it almost impossible to erect the overhead structures at actual fouling points for the support of high signals.

The dwarf signal has the advantage of being located at the proper point to permit trains to occupy tracks to full capacity, but as it is used today it cannot give the information as to the occupancy of the track ahead. The engineman

running under a dwarf signal caution indication must determine for himself whether the track immediately ahead is occupied. His decision depends largely on his view of the track. The careful engineman will proceed with caution prepared to make a stop, watching the line-up of switches to determine whether he is to be deflected to an occupied track. The optimistic engineman will take a chance and proceed without reduction of speed, prepared to stop at the next signal, but he may have to make an emergency stop before he reaches it. The first man may slow up the terminal movement unnecessarily. The second man may make follow-up movements hazardous. The only factor of safety for him is to have the maximum speed permitted in the terminal slow.

Actual observations of the speed at which train movements are made through short slips and crossovers on some terminal layouts would indicate that the track engineer has allowed for a considerable factor of safety in his decision as to the

COLOR LIGHT	POSITION LIGHT	NAME	INDICATION
RED GREEN YELLOW		STOP SIGNAL	STOP
RED GREEN YELLOW		CAUTION SIGNAL	APPROACH NEXT SIGNAL PREPARED TO STOP
RED GREEN YELLOW		CLEAR SIGNAL	PROCEED AT AUTHORIZED TERMINAL SPEED
RED GREEN YELLOW		PERMISSIVE SIGNAL	PROCEED WITH CAUTION PREPARED TO STOP SHORT OF TRAIN OR OBSTRUCTION

Four Position Dwarf Signal Indications

safe speed at which these deflecting moves should be made. Unless enginemen are constantly checked up the speeds are usually exceeded, but very rarely with disastrous results. This has an important bearing on the need in indicating definitely when the track ahead is occupied, as the speed of the optimistic engineman may be one that makes an emergency stop difficult. Having in mind the cautious and the confident engineman, it is seen that the addition of the fourth indication, which is gained by using two-arm high signals, will speed up the first man on the other indications and will retard the second man when he is moving to occupied track.

Considering the two schemes of signaling, we find that if the addition of one indication were made to the dwarf signal scheme it would have the advantage of special terminal signaling without its disadvantages, and the advent of the light signal makes this fourth indication possible without any change in the design of the signal as now used for three indications. This would seem to make the dwarf signal particularly adapted for the proper governing of traffic on a busy terminal, as it combines the advantages of the two systems as now used on our important terminals without their disadvantages and makes possible the operation of a busy terminal to its full capacity. The four indications are shown in the sketch.

LUMBER MILLS OF BRITISH COLUMBIA report that 90 per cent of their output is now being purchased by China and Japan. The Prairie Provinces were formerly the chief outlet for this province's lumber. So insistent is the demand from the Orient that most of the Coast mills are said to be sold out a month ahead.



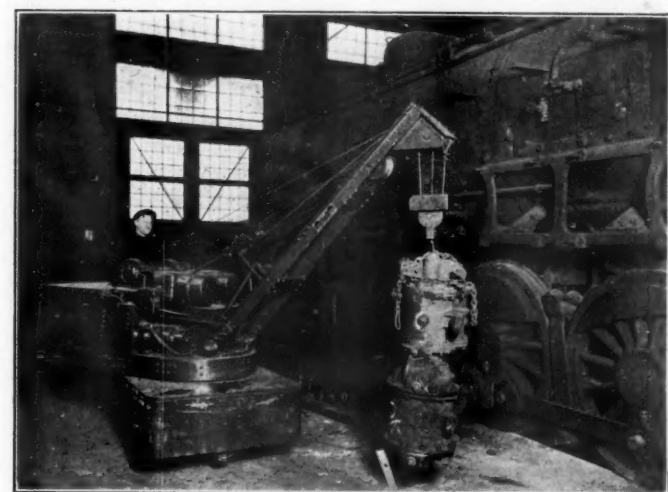
# Railway Electrical Engineers Meet in Chicago

## Heavy Electric Traction, Power Trucks, and Axle Generator Pulleys Among Subjects Discussed

THE THIRTEENTH annual convention of the Association of Railway Electrical Engineers was held at Hotel La Salle, Chicago, October 31 to November 3. This was the first annual meeting that the electrical men have held since October, 1920, the usual fall gathering having been omitted in 1921 on account of the business depression which prevailed at that time. In spite of the labor difficulties of the past troublesome months, the convention was well attended and much interest was manifested in the proceedings. Considerably more than 100 railway electrical officers registered and the attendance included many others who did not register.

The first session of the convention was called to order by the president, L. C. Hensel, electrical engineer of the St. Louis-San Francisco Lines, at 10:30 a. m. on Tuesday, Oc-

tober 31. After a brief opening address by Mr. Hensel, the reports of the secretary and auditing committee were presented and accepted.



Crane Type Trucks Show Remarkable Economies

tober 31. After a brief opening address by Mr. Hensel, the reports of the secretary and auditing committee were presented and accepted.

Presented as unfinished business was the question of affiliation with the American Railway Association. This subject was first broached to the Association of Railway Electrical Engineers at its annual convention in October, 1919, and has been held in abeyance ever since. Originally, it appeared that certain advantages might accrue to the members by becoming affiliated with the American Railway Association, but more recently these advantages do not appear so marked. Whatever may subsequently develop in the situation will be taken care of by a committee consisting of J. R. Sloan, chief electrician, Pennsylvania System; L. S. Billau, assistant electrical engineer, Baltimore & Ohio; J. A. Andreucetti, assistant electrical engineer, Chicago, Northwestern, and E. Wanamaker, electrical engineer, Rock Island Lines.

E. A. Lundy of the Railway Electrical Engineer, chairman of the committee on data and information, presented a report including tabulated information showing the extent to which electrical equipment is being used on the various railroads throughout the country. This report is the first of its kind that has been presented since 1918, and the figures given show a remarkable increase in the use of electrical apparatus. One field in which this increase is particularly noticeable is that of electric arc welding. It is plainly evident that the roads are coming to realize the economic ad-

vantages of electric welding and it is only a question of time when this work will be common practice on all roads.

A report on power trucks and tractors was presented by L. D. Moore of the Missouri Pacific. Inasmuch as trucks and tractors are not always electrically operated, the report includes gasoline operated equipment as well as those deriving power from storage batteries. The report outlines in general the different types of equipment for use under various conditions and locations. While it was believed for the most part that electrically operated trucks and tractors would satisfactorily meet all requirements, it was conceded that under some conditions gasoline equipment might be the best to use.

One particularly interesting development which was brought out in the discussion which followed the reading of the report was in regard to the crane type truck. John Carson of the New York Central Lines stated that his company was using three trucks of this type in enginehouse service and had found them to be one of the greatest labor-saving machines that had ever come into their hands. Locomotive air compressors, front ends, main rods, or any similar parts are handled with no trouble whatever. The machines are of the Elwell-Parker type, having a capacity of 3,000 lb. at a 6-ft. radius. The trucks are equipped with outrigging so that the danger of the machines tipping over is very remote. It has been found best to place one man on each shift in charge of this truck and not to allow it to be operated by anyone else.

To illustrate the economy effected with the crane type truck, Mr. Carson stated he knew of several instances where a crippled compressor had been removed and a new one applied by three men in 25 minutes. A front end can be handled in a proportionately short time. For use in yard work, unloading cars, or handling material such a truck with an operator and two men will accomplish 75 per cent more work than six men will do in the same length of time.

The Committee on Heavy Electric Traction presented a very extensive report, including much tabulated data on railroad electrification in both North and South America. This report was read by J. R. Sloan, chairman of the committee. In reply to a question by E. Marshall, electrical engineer of the Great Northern, as to what lies in the immediate future along the line of heavy electric traction, Mr. Taylor of the General Electric Company said: "It is rather a general subject as to just what is going on. Here in Chicago, the Illinois Central has just given out a report that it is going to electrify its suburban service, using 1,500 volt direct current. Of course, that is in the immediate future. There are several foreign jobs, one in Chile and another in Mexico. There seem to be more requests for reports on electrification just now than at any other time; more steam railroads seem to be interested in the possible electrification." In speaking on the same subject, Q. W. Hershey of the Westinghouse Electric and Manufacturing Company said in part: "During the war, of course, there was no money available to spend for electrification and all energies were exerted to provide transportation. Following that came a peak in traffic requirements and again everybody fell in to move the load. Then came the depression. Then following that another peak, which we are now in. The problem of the railroads has been taking care of details for the immediate necessities of the transportation requirements, so that in this country there has not been very much physical electrification work

done in the last four or five years. This condition exists—that in a very broad sense the railroad managements are looking forward to preparing for the time when money will be available to provide such electrification as they will find they need. It would seem your part of the electrical inquiries of the railways should be that of studying their problem rather than letting some outside people do it without their participation. I want to compliment the committee and also the Railway Electrical Engineer for the data which has been prepared. I believe this is the most complete statistical data that has been offered at any time since electrification has been thought of, and it will stand as a valuable reference work."

In touching upon the factor of regeneration by electric locomotive, it was brought out that the important feature was not the amount of power which could be returned to the trolley or power system but rather the control and restraint of trains traveling down grade.

One of the significant points in the report of the Committee on Electric Repair Shop Facilities and Equipment was brought out by E. H. Hagensick of the Union Pacific, who said: "During this last labor trouble on our road we have had a great deal of difficulty with motors burning out and we have got by simply because we had lots of spare motors." Spare motors are vitally essential if tie-ups are to be avoided, for without means to replace a burnt out machine most costly delays may easily develop. In order not to carry an excessive number of spare motors or parts, it is clearly advantageous to standardize on motors for different purposes.

Another factor which is destined to become an important adjunct to the already large scope of activities for the electrical men was presented in the form of a motion picture illustrating the Regan System of Automatic Train Control. This picture, together with a description of the equipment, was presented by Joseph Beaumont and B. F. Meisel of the Regan Safety Devices Company.

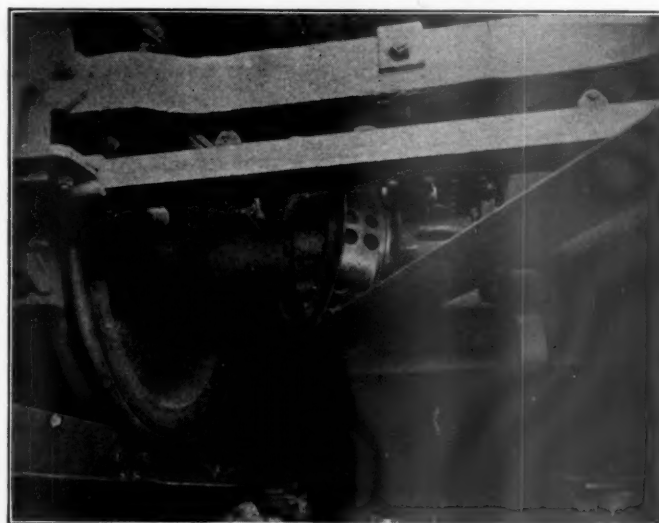
The report of the Committee on Illumination was presented by L. S. Billau, chairman of the committee. A number of changes has been made in the report since it was presented at the June meeting of the association in Atlantic City. The principal point of interest, however, is that of train lighting lamps now available and listed in commercial production. Stocks of lamps which are in general use by all railroads and are apt to be found everywhere in the country, ought to be reduced to a minimum. The committee recommends that the 50-watt gas filled lamps should be brought out with the bowl enameled or frosted in order to prevent glare which results from the unprotected filament of such lamps. There has been an increasing demand during the past year for a locomotive cab lamp of smaller physical dimension than is possible to secure at present, and it is believed that a smaller 32-volt lamp can be developed that will give reasonably good life. It may also be said that in the effort to secure smaller lamps for locomotive cab use the Michigan Central and the New York Central Railroads have been experimenting with 6-volt lamps. In view of the fact that practically all railroads are using flashlights for inspection purposes throughout all departments, it was felt that some consideration should be given to the desirability of standardizing these miniature lamps.

Another point emphasized by the committee was the fact that illumination intensities are being used in other than railroad fields that are 100 per cent higher than was considered good practice three or four years ago. It is believed that an increase of lamp load, which means higher illumination intensities, would be justified by the advertising benefit derived even though it might increase the cost of operation and maintenance to some extent. The discussion developed the fact that a mill type tungsten filament lamp has been developed which many of the roads are using with entire satisfaction in all kinds of portable service in shops.

The report of the Committee on Motor Specifications presented by E. Wanamaker did not provoke a great deal of discussion, but the committee has obviously taken a step in the right direction by preparing a standard specification for motors used in railroad service. Such motors are of necessity frequently required to perform work that is particularly arduous. By preparing a set of specifications with the cooperation of representatives of the motor manufacturers, motors more suitable for the exacting requirements of railroad service may be developed.

The discussion of the report of the Committee on Train Lighting Equipment and Practice centered largely upon the subject of axle pulleys, particularly the barrel type pulley as used by the Pullman Company. E. Lunn, chief electrician of the Pullman Company, explained at considerable length the development of the barrel type pulley and quoted figures showing that the belt life obtained with their use was approximately 100,000 miles.

Another type, known as the universal pulley, which has recently been brought out and is undergoing test on the Chicago, Rock Island & Pacific, came in for some discussion.



New Axle Pulley Built on the Universal Joint Principle

This pulley, which is designed on the universal joint principle, aims to keep the axle pulley in line with the generator pulley regardless of whether the car be on curve or tangent track.

The report of the Committee on Electric Welding consisted of a tentative specification for the rating of welding machines. The little discussion that followed was confined largely to the merits of alternating current welding equipment and the extent of its application, a subject upon which opinions seem to differ.

The electric headlight report was substantially the same as the progress report presented in June, with a few minor changes. L. C. Muelheim of the Baltimore & Ohio, chairman of the committee, read the report. The discussion which followed touched briefly on the subject of regrinding ball bearings and rebushing and reboring the turbo-generator machine cases to fit the ball bearing properly, after having been worn down in service. Both of these practices are entirely feasible and practical.

The final paper of the convention was the report of the Sponsor Committee on Insulated Wires and Cables of the American Engineering Standards Committee. The report was accepted and no discussion followed. An interesting feature of the final convention session was the presentation of a motion picture showing the various stages in the manufacture of rubber covered wire by the Okonite Company, Passaic, N. J.



### Election of Officers

The officers elected for the ensuing year are as follows: E. S. McNab, Canadian Pacific, president; Ernest Lunn, Pullman Company, first vice president; F. J. Hill, Michigan Central, second vice president. Two new members of the executive committee were selected as follows: E. H. Hagensick, Union Pacific, and George W. Bebout, C. & O.

### Railway Electrical Supply Manufacturers'

#### Association Exhibit

The exhibit of the Railway Electrical Supply Manufacturers' Association, which is always held in conjunction with the convention of the electrical engineers, was highly success-

ful. There was a number of new exhibitors. All of the exhibition space was taken up, and if the number of exhibitors increases further either larger quarters will have to be secured or some of the larger companies will be obliged to give up part of their space.

The officers of the manufacturers' association elected for the coming year are as follows: Daniel Woodhead, Daniel Woodhead Company, Chicago, president; R. L. McClelland, Westinghouse Electric and Manufacturing Company, New York, senior vice president; George H. Scott, Safety Car Heating and Lighting Company, Chicago, junior vice president; Edward Wray, Railway Purchases and Stores, Chicago, treasurer; J. Scribner, General Electric Company, Chicago, secretary.

## The Financial Starvation of the Railways\*

### Industry and Commerce Strangled by Shortage in Transportation Facilities

By Herbert Hoover

Secretary of Commerce

OUR TRANSPORTATION facilities have lagged far behind the necessities of the country. Progress has been made in their restoration from the demoralization of war, but our rolling stock, our trackage, and many of our terminals are unequal to our needs. Some increases in equipment have been made during the past year; yet they are entirely insufficient as the result of long-continued financial starvation. The deficiency in transportation finds its visible expression in car shortage; and while the recent strike has temporarily aggravated the situation, the trouble is far more deep-seated. Except during periods of business depression or strikes there has to some degree been continuous car shortage for the last six years. Furthermore, car shortage reaches its most acute stage during the four or five months of peak load in the fall and early winter.

Railway cars are the red blood corpuscles of commerce, and we suffer from commercial anaemia every year, because they are starved. The losses through short transportation are a tax upon the community greater than the cost of our government, because such a shortage not only stifles the progress of production and introduces speculation into distribution, but it also seriously affects price levels. No better instance exists than the lift in the price of coal by over 300 per cent in 1920 when there was no strike, and over 60 per cent in 1922, after production following the strike had been resumed. In both cases the mines could have produced 30 per cent more coal, and if the railways could have transported even 20 per cent more, then prices would have been normal. Furthermore, this very shortage is one of the most deep-seated causes of the instability in the bituminous industry and its recurrent strikes. The car shortage also directly affects our farmers, because in every car-shortage period a price differential on grain below the Liverpool price (and yet in excess of the railway rates and handling costs) sets in of from 5 to 15 cents per bushel. The losses to livestock growers are very great because of the necessity to feed stock beyond the fattened stage. And there are regularly great losses in fruit and vegetables because of the lack of refrigerator cars.

The management of our principal railways to-day, by all the tests of administration, of load factors, of mechanical ef-

iciency, etc., is the most efficient transportation machine in the world in so far as it is not limited by causes beyond the managers' control.

#### A Cumulation of Experiments

The situation has been contributed to by the war, but also fundamentally by the cumulation of experiments in public relations to the railways, both national and state. We have tried uncontrolled operation; we have tried negative regulation in the prevention of discrimination; we have tried nationalization; we are now trying positive regulation. Nationalization would be a social and economic disaster; free operation would reconstruct the vicious practices of 30 years ago. Regulation in some form is necessary, but constructive development of this regulation—to preserve the initiative and responsibility of our railway executives, to secure the fine values of private operation, and at the same time to secure public protection and assure adequate service—are absolutely vital and not necessarily incompatible. The present Transportation Act possesses many constructive features and some weakness. It was the result of compromises in many particulars, and these very compromises are some of its weakest points.

#### Disproof of Fiction That Earnings are Guaranteed

If the causes of financial starvation were solely a question of war and of hard times, we could afford to wait for a natural solution, but they are not. The Transportation Act of 1920 affirmatively declared that the rates should yield a fair return on the aggregate real value of the railway properties (as determined by the Interstate Commerce Commission) used in public service and operated under honest, efficient, and economical management. It provided that the fair return during the first two years should be at the rate of 5½ per cent on the railways as a whole, or in each of the major groups in which the country might be divided in the administration of the law, and that during this period there might be added ½ per cent for rehabilitation. At the expiration of this two-year period the Interstate Commerce Commission placed the fair return at the rate of 5¾ per cent per annum, or 6 per cent less ¼ per cent to cover income taxation. The law, however, further provided that any particular carrier which earns in excess of 6 per cent per annum shall hand over one-half of that excess into a contingent fund to be administered by the Interstate Commerce Commission "in fur-

\*Extracts from the forthcoming annual report of the Secretary of Commerce for the fiscal year 1921-22.

therance of the public interest in railway transportation" either by loans to carriers or by the purchase of transportation equipment and facilities and the leasing of the same to the carriers. The carriers have never earned these amounts and the failure of earnings without charge on the government is complete disproof of the current fiction that earnings are "guaranteed."

### Strong Railroads Cannot Provide

#### Equipment for Weak Ones

Furthermore, the immediate effect of this recapture provision would be that whereas the strong and fortunately situated railways are able to earn in excess of 6 per cent, and are therefore able to secure finance for betterments, the very fact that they did earn in excess of the average would mean that the weaker roads were unable to earn up to the average. It may be accepted as a general proposition that carriers earning materially below the  $5\frac{3}{4}$  per cent return are not in a position to command the confidence of investors which is necessary for expansion to meet the public demand. The contingent fund makes available money which such carriers may borrow, provided, however, that they are able to give the necessary security for repayment. It is easy to comprehend that such a contingent fund may serve the purpose of bridging carriers over temporary difficulties, but it is more difficult to understand how a carrier which, though it may be very essential to its part of the country, is financially a chronic weakling is to be made strong and capable by becoming more deeply involved. If there is any merit in this device, it seems not to extend to those anaemic carriers that are unable to give the government the color of assurance of repayment. This device also carries a certain liability to the government in that carriers that borrow from the fund and fail to pay are likely to become government railways through their financial difficulties. It would seem that the first of the two uses to which moneys of the contingent fund may be put holds out better promise of furtherance of the public welfare. However, the creation of such a national reserve of transportation equipment has not been seriously undertaken. It would seem that our dire distress in time of car shortage and, at times, motive-power shortage would strongly argue for the creation of such reserves. Rolling stock for limited use during 60 to 90 days is probably unprofitable to any railroad, and certainly the stronger railroads can not, and should not, be expected to provide it for the weaker ones.

The present act contemplated the solution of the problem of the weak roads through voluntary consolidation of the weaker and stronger roads into larger systems to be definitely indicated by the Interstate Commerce Commission. There is no doubt that such consolidation would be a large advance in solution to the whole problem. As the nation has resolved to control rates, and thus to depend no longer on competition as a means of rate regulation, it should secure the manifest advantages of larger systems. The economies in operation through standardization and better employment of rolling stock would be constructive themselves, but of vastly more importance would be the strengthening of the foundations for the financing of betterments and for more intelligent handling of rate regulation. The part of the act providing for consolidations has not been advanced very much so far, although a tentative plan for grouping has been issued to serve as a basis for investigation, and hearings have been begun. When the permissible consolidations are once enunciated it is possible that some railways can arrange terms amongst themselves for such consolidations.

How far such voluntary action would solve the problem is uncertain, but compulsory consolidation leads into many untenable premises. It might be that there could be invented some inducements to consolidate into the proposed systems, or to lease for consolidated operation, or some form of co-operative operation. If the recaptured profits principle is to

be maintained and if it can be enforced by the Interstate Commerce Commission, the assured application of such recaptured profits within such enunciated groups in some form might at least be worth discussion as an inducement to consolidate.

The alternative of repealing the mis-called guaranty clauses of the act does not fundamentally assist the expansion of the weaker roads, for so long as rates are controlled by 49 different commissions, it is unlikely that the rates would or could be made discriminatory in favor of the weaker roads, and thus the basis for the financing of betterments by these roads would not be materially improved. The suggestion that all rate control should be repealed except control against discrimination or preference would not meet the situation of the weaker roads, because the restoration of competitive rates would enable the stronger roads to again drive the weaker roads nearer to the wall.

### Rate Structure Needs Reorganization

Another vivid question in this connection is that of the rates themselves. In an era of wide disparity between farmers' income and that in and of industry, the transportation rates have proven to be a heavy burden on agriculture. On the other hand, under present conditions railway earnings are obviously not large enough to assure railway expansion. Some relief both to the railways and the farmer may be obtained by thorough reorganization of the rate structure. Some classes and areas of traffic are carried at actual loss; others are carried at lower rates than the relative value of the commodities warrant; and a series of scientific upward readjustments should be made in some cases in order to give the railways and the shippers of primary commodities and agricultural produce some relief. The recent reduction of 10 per cent in rates on luxuries as well as on primary goods contributed nothing to commerce and impoverished the railways just that much. The tangled skein of rates seems a mesh in which there is so persistent a resistance against every constructive proposal, that we are incapable of rescue except by some complete departure in courage.

### Labor Regulation Unsatisfactory

Another phase of present regulation is the machinery of wage control and strike prevention, which are unsatisfactory. The legislation embraces the important principle of the public's right to secure continuity of service and it carries the obligation of the public to secure just wages to the employees. The Railway Labor Board has performed large services to the employees, to the railways, and to the public. The difficulties arise from the tripartite structure of the board under the act, from its detachment from the rate-making body, and especially from the fact that the act did not originally contemplate that the government would be a universal wage fixer. It was the assumption that the board would only function in case of a major threat of stoppage in service. The failure of the local adjustment boards for direct contact between employees and employers has thrust all disputes on the labor board; and in result we have practically governmental fixing of all wages and conditions of labor.

There can be no question that action in some direction is imperative, if industry and commerce are not to be further strangled by a shortage in transportation. Whatever may have been the sins of railway finance in the last generation, we are not only suffering from them, but we have maintained an attitude of bitterness in our public relationship to our railways for which we pay thrice over in prevention of their proper development.

We must have increased transportation, if we are to maintain our growing productivity. We must therefore find a way out of the cycle of systematic starvation of a large part of our mileage and the denudation of our railway managers of their responsibilities and initiative.



# T. E. A. Displays Keen Interest in Long Engine Runs

## Convention Discussed Utilization of Power and Operation of Stoker and Oil Fired Locomotives

A REPORT of the opening session of the thirtieth annual convention of the Traveling Engineers' Association, held at the Hotel Sherman, Chicago, October 31 to

November 3, inclusive, appeared in last week's issue. The following are abstracts of the more important reports which were presented and discussed at the later sessions.

### Distribution of Power: Its Effect on Operating Costs

At more or less frequently recurring periods, every railroad is confronted with a situation where its ability to earn revenue is controlled by its ability to move the traffic offered. Likewise periods occur when surplus equipment represents a large overhead investment producing no revenue. Any plans that will contribute toward improving these conditions will help greatly in reducing the general cost of operation.

A study of the power situation with a view to conserving tractive effort on the railroad system as a whole, without reference to particular conveniences or economies on a single division, is of paramount importance. Records of fuel and locomotive maintenance cost will show that, generally speaking, where the size of the train is limited, the smallest type of engine that will comfortably handle the train will give the lowest annual operating cost for fuel, wages and repairs, and in turn will release the heavier type of power for trains where the loading is controlled only by the tractive effort of the engine. Investigation has shown instances of comparatively heavy engines handling very light local passenger trains, with lighter engines handling tonnage freight trains on other divisions, perhaps for the reason that the engine-man returned on a heavier run, or because that particular division inherited that particular class of power as a result of some changes in the power distribution on the district as a whole. Changes in power distribution or extending the run of locomotives over two divisions have in such cases brought about considerable saving in tractive effort and as a result decreased the cost of operation.

Locomotives having a large reserve of power for the trains they are required to handle, or more modern in design, can be in less than average good condition and yet make the time without failure. Furthermore, small types of more or less antiquated power are not popular at the general shops for overhauling, for the reason that the more modern types are usually in demand, and it is easier to figure on what they will require in repair parts. The motive power officer on the division has for his yardstick man hours per locomotive despatchment and engine failures, rather than the total cost of operation per 1,000 gross ton miles or per passenger car mile.

It has been stated by eminent authority that the loss to the farmers of the United States, through not being able to move their crops when markets are favorable, amounts to about \$400,000,000 annually, and yet railroad officers find themselves at certain periods with considerable surplus of power. These considerations, together with the fact that the average miles per locomotive day for freight locomotives in 1920 was 59.3, gives to the subject of power utilization a compelling interest, any discussion of which will naturally resolve itself into consideration as to the merits of pooled vs. regular engines, of long runs vs. division runs, and many other things.

One feature to consider in engine assignment is that engines having a large reserve of power for the trains assigned to them do not call for the same refinement in the handling and firing that will obtain where it is necessary to have skillful handling in order to deliver the desired service. This

absolutely works out in practice. The fuel used at terminals and in stand-by losses represents probably 30 to 35 per cent of the total and this expense increases with the larger power on light trains.

The cost of locomotive operation for a representative mid-western road for the year 1920, and which will be fairly representative of 1922 conditions, was as follows:

	Total cost for year	Cost per loco. owned per annum
Fuel .....	\$28,789,756	\$13,158
Repairs .....	26,462,086	12,094
Wages—enginemen, firemen and enginehouse employees .....	18,442,173	8,429
Lubricants .....	424,917	194
Other supplies .....	335,696	153
Total of selected items.....	\$74,454,628	\$34,029

This represents average costs applied to all locomotives owned. If this were shown only for the locomotives in actual service or for the heavy freight locomotives in service, the average cost would be much higher, but this will serve for illustration.

The St. L. S. F. has for some time made up a daily cost sheet for each freight train operated. This shows the cost per 1,000 G. T. M. for fuel and wages, including overtime. This information reaches all division operating officers, including the road foremen of engines, daily, and is very valuable in keeping individual fuel and wage costs before all concerned, including enginemen and trainmen.

On the majority of roads the operating or transportation department distributes the power, in conjunction with the motive power department, which usually approves of the individual engines to be assigned to divisions or runs, but this is not always the case in transfers of power between divisions or districts. A very close working arrangement is necessary if the best results are to be obtained. Transfers of power are sometimes, if not usually, made at times of rush business when new men are entering the service, both in the shops and on the road. A transportation officer without training in locomotive matters cannot fully appreciate all that is involved in introducing new types of locomotives into new territory. The experience of men with the training of the traveling engineer is very valuable in such times and should be utilized. The traveling engineer so advising should be thoroughly familiar with the operating conditions on the railroad as a whole and make his recommendations accordingly, without reference to division economies which disregard the general good to be accomplished. Compound engines or engines equipped with certain special devices, while giving excellent service where regularly used, may prove of negative benefit when thrown into a group of engines of similar tractive power perhaps, but unlike in design or equipment. This is especially true where there are many new men in engine service and shops not entirely familiar with the types of locomotives or devices.

A number of roads have increased the available power supply through lengthening locomotive runs. This will not apply equally on all roads, but has great possibilities under

certain conditions. This practice has been very much extended since our 1921 meeting, and the experience of the members is invited in the discussion to follow. Local conditions, as to train schedules, conveniences for taking coal and water, the grade of fuel used and facilities for caring for the fire and ash-pan enroute, must be considered. It is a fact that enginemen and firemen are assigned to runs rather than to engines and the difficulty in actually having regular crews on engines has increased, thus making it difficult to secure satisfactory mileage from regularly assigned engines to runs. It is safe to predict that where the character of the fuel used will permit, the tendency of operating departments of railroads will be to develop the fullest information as to the desirability of extending the length of runs for locomotives in passenger and fast freight service, but particularly in passenger service. The experience of the New York Central Lines, with which two members of your committee are connected, has been that to date the average monthly mileage of all passenger locomotives has not increased as a result of running certain engines over two divisions, although individual engines will make large mileage for a period. There is a saving in fuel due to decreased terminal consumption and the supervision given toward maintaining good condition of fires enroute to avoid delays for steam. We suggest the possibilities of extended runs for locomotives be made a subject for next year's convention.

Segregating certain types of engines to one district or division, instead of mixing up different classes in one territory, has its advantages. This may appear to impose a hardship at first if the engines are new to the district and somewhat more difficult to maintain and to operate than the engines regularly or previously used, but if done at a time when business is not too heavy and when experienced men are on both sides of the engine, and a high standard of inspection and repairs can be built up, it is a very paying proposition. It is the practice, also, on some roads to work fairly close on power at all times, the motive power officers themselves insisting on this, thus keeping the largest possible reserve of power laid up in good order for rush periods. It costs money to take engines out of storage, and it should not be done without knowing that they are actually needed.

The roads referred to also maintain pooled freight engines throughout the year rather than assigning regular crews to engines during slack periods and then having to pool them when a rush comes on. The principle involved is that of maintaining a more rigid average year round system of inspection and repairs at terminals than would obtain with regularly assigned engines for certain seasons of slack business, and when we more or less depend on the engineer's report and personal interest to help maintain the power than when running pooled engines. However, when forced to return to pooling it is hardly possible to build up quickly the inspection and the method of caring for repairs or to keep the same degree of interest alive among the engine

crews that obtains with regularly assigned engines or with a highly developed plan of pooled service. The advent of newly promoted enginemen and new firemen is an important point to consider and it is always to be remembered that the period of rush business is when the earning capacity of the locomotive is the greatest and when we should be able to get the best possible use from it.

The report is signed by Robert Collett (N. Y. C.), chairman; David Meadows (M. C.); W. R. Garber (K. & M.); J. E. Ingling (Erie), and C. A. Fisher (G. N.)

### Discussion

The discussion of this report centered very largely around the subject of long engine runs, in which it is evident that the members of the association are taking a deep interest. Several cases of passenger runs of from 250 miles to over 600 miles were cited, and a number of cases were also cited where freight locomotives were running over two districts. It developed that in several cases the extension of the length of the locomotive run has required an increase in the size of the cylinder lubricator. The four-pint lubricator has been found too small for large passenger power and in some cases six pint lubricators are being installed. This matter has offered no real obstacle, however, as extra oil is placed on the engine for use in case the original filling does not carry the locomotive over the entire run.

On the New York Central passenger locomotives are being run through from Harmon, N. Y., to Syracuse. This has saved turning 40 locomotives a day at the Rensselaer terminal (Albany, N. Y.), at an average cost of from \$6 to \$9 each, with a corresponding reduction in the number of movements between the roundhouse and the station, a distance of one mile over a busy double track bridge. Car department employees fill the main pin grease cups and shovel the coal forward at the Albany station in an average of from five to seven minutes. The locomotives have a short layover at Syracuse and return to Harmon in less than 24 hours. This practice has not necessitated any increase in the engine house force either at Harmon or Syracuse. On the two divisions, trains which formerly required 21 locomotives to handle are now being taken care of with 16 locomotives. No case was cited in the discussion where the practice, once established, had been discontinued because of the inability to overcome any of the difficulties encountered, although the shopmen's strike has interfered with the development of the practice in some cases. Although numerous difficulties have been encountered, the consensus of opinion of those members of the association who have had experience with it, indicates that some increase in locomotive mileage may be expected, that train miles per locomotive failure need not be decreased by the longer runs and that engine house expense will be reduced. Definite opinions as to what effect the long runs will have on fuel consumption and locomotive maintenance was not brought out.

## Is Mechanical Firing Reducing the Cost of Train Operation?

The outstanding features of stoker firing are the possible increase in tonnage or decrease in time between terminals, or both, together with the possibility of handling a fuel of a lower B. t. u. value and a corresponding lower cost.

As an offset against these considerations, which directly affects the cost of train operation, there has always been charged the increase in coal consumption per 1,000 gross ton miles, which has always been considered as going hand in hand with stoker operation. In the early development of the stoker the only successful machine was one having a relatively high point of delivery, and, consequently, when the locomotive was being forced to its maximum the lighter

particles of coal were carried over the arch, where arches were used, thereby resulting in an excessive stack or spark loss. In recently conducted road tests it has been found that this condition no longer prevails. It was shown that where the same attention was given the stoker as in hand firing, the fuel consumption per 1,000 gross ton miles per hour was generally lower on the stoker-fired locomotive. This difference in fuel consumption was no doubt due to the higher average temperature obtainable in stoker firing, due to the elimination of the periodical inrush of cold air, and the more perfect combustion possible through carrying a lighter fire as well as the more regular and uniform fuel feed.



The data in the table was obtained as the result of a careful test conducted on a trunk line road to determine the difference between assigned and pool service.

FUEL PERFORMANCE OF U. S. R. A. LIGHT MIKADO TYPE LOCOMOTIVES  
EQUIPPED WITH STOKERS

February, 1922		Assigned service	Pool service
Engine No. ....	652	656	
Engine miles .....	3,150	3,703	
Gross ton miles .....	4,514,835	4,496,685	
Pounds coal between terminals .....	476,710	605,530	
Pounds per 1,000 G. T. M. ....	105.59	134.66	
March, 1922			
Engine No. ....	652	656	
Engine miles .....	3,750	6,144	
Gross ton miles .....	5,129,449	7,723,177	
Pounds coal between terminals .....	580,862	913,279	
Pounds per 1,000 G. T. M. ....	113.24	118.25	

The test extended over a period of 60 days. The two locomotives were identical in every respect, and operated in the same class of service, viz., fast freight. Locomotive No. 652 was operated by the same crew throughout the entire test, while locomotive No. 656 was handled by four crews alternating. Note that during the first 30 days the assigned locomotive made 18,150 more ton miles and 553 less engine miles than the pooled engine, and consumed 128,820 pounds less coal or a difference of 27.5 per cent calculated on a 1,000 gross ton mile basis.

At the end of the first month it was possible to make an immediate comparison which showed up the above difference in coal consumption. Steps were therefore taken to bring the performance of the pool crews to that of the assigned crew by teaching and getting the men interested, and the result of this action is reflected in the results for March.

While these results show an increase of 7.3 per cent in fuel for the assigned engine, this increase was due almost entirely to weather conditions. The table shows, however, that the active supervision over the pool crews, together with their co-operation, resulted in a decrease of 13.8 per cent. As the weather conditions affected both alike, it is reasonable to assume that had the pool crews been allowed to go on during the month of March as in February, the coal consumption for Engine No. 656 would have been affected the same as in the case of Engine No. 652, i. e., increased 7.3 per cent, which would have made it approximately 144.49 lb. per 1,000 gross ton miles instead of 118.25 lb.

This test proves, first, that the excess in fuel consumption of the pooled over the assigned engine was not due to the stoker or the locomotive, but altogether to the manner in which it was handled by the four crews; and, second, that intelligent supervision will bring the same results in case of stoker as in hand firing.

Economical train operation means the movement of the greatest possible tonnage over a division in the shortest possible time. The loading and time factors are the all-governing ones and must be carefully worked out by the operating department, as an error of 10 per cent either way, i. e., overloading or underloading, spells a material increase in operating expense. What has the stoker to do with correct loading? Everything. Where the coal consumption per hour approaches the physical limitations of the fireman, it is only through the application of the stoker that a uniform maximum steam pressure is possible at all times, and it is only through the maintenance of the maximum steam pressure that the desired speed can be sustained.

Opinions vary as to the size of the locomotive to which the application of stokers seems justified. This is because the conditions are not the same on all railroads or even on all divisions of the same railroad, and as men speak of things as they find them, it is but natural that there should be a difference of opinion.

A certain railroad in the Southwest, where temperature ranges are high, operated consolidation type locomotives of 45,000 lb. tractive effort, 49.5 sq. ft. grate area, over two divisions, one being 117 miles long of practically one per

cent continuous grade, the other 124 miles long with one per cent broken grades, the longest continuous grade being 40 miles. The rating of the locomotives when worked to their capacity was 1,500 gross tons. Owing to the physical limitations of the firemen it was found necessary to reduce the tonnage over the first district to 1,150 gross tons and over the second to 1,250 tons in order to get the trains over the road within the sixteen-hour period. Stokers were afterward applied to these locomotives and the tonnage raised to the locomotive capacity; i. e., 1,500 gross, or an increase in the first instance of 30 per cent and in the second of 20 per cent. As the wages remained the same, this change resulted in a corresponding direct decrease in operating cost. In this instance it was not a question of the size of the locomotive so much as a question of climatic conditions and physical characteristics of the railroad.

We now cite a case where the locomotives were so large that when worked to their capacity the firemen were unable to supply the coal as fast as the engine could burn it. These were of the 2-10-2 type, 67,000 lb. tractive effort, 80 sq. ft. grate area, operated over a choppy division 100 miles long having short grades of  $1\frac{1}{2}$  per cent. The tonnage behind these engines when hand fired was 2,350 gross tons. Stokers were applied and the tonnage increased to 2,650 gross or 12.76 per cent. The wages and other costs remaining the same, this resulted in a decrease in cost of train operation of 12.76 per cent.

In some very exhaustive tests conducted in the Dominion of Canada during the months of May and June, 1921, with Mikado type locomotives, 53,000 lb. tractive effort and 56.5 sq. ft. of grate area, it was found that the maximum drawbar horsepower that could be developed hand firing on the maximum grade was 996, while the same type of locomotive stoker fired gave a drawbar horsepower output of 1,227, an increase of 22 per cent. An increase of 300 gross tons over the normal hand-fired rating was handled by the locomotive stoker-fired, maintaining the same average speed as was maintained by the hand-fired engines with the lighter tonnage.

On the road represented by the chairman, there is a seasonal fruit rush which calls into service every available man and locomotive to such an extent as to make it necessary to double the road (150-mile division) wherever the condition of the locomotive, the crew, and the hours of service make it possible. When this rush is on, we find no difficulty in getting the men to double back on stoker-fired locomotives even though they have a stoker-fired engine in but one direction. Therefore it is clear that if we did not have stoker-fired engines it would mean either more men, which would often result in the payment of the arbitrary held from home terminal, or in holding the engines for the crew's rest, or in an increase in the number of engines assigned to this service which would mean an increased number of idle engines during the slack period. An idle engine costs money even if standing dead behind the roundhouse, as it represents an investment on which the interest will run from \$10 to \$15 per day.

The above simply represents the definite decrease in cost of train operation as developed on different railroads through the application of stokers to locomotives of different dimensions.

There is, however, another decrease in cost of train operation which can be absolutely attributed to the application of the stoker, but which varies with the seasons and climatic conditions of the states traversed by the railroads. We refer now to the necessity of sending out relief firemen to take the place of others who on account of the extreme heat or through other causes have become physically exhausted. While this may appear as a small matter, records indicate that on some roads the loss chargeable to this one item amounts to considerable. The committee has records

of one railroad located in the Mississippi Valley having one division 156 miles long, operated by locomotives developing 39,000 lb. tractive effort and during the summer months it is necessary to have relief firemen stationed at intermediate points 50 miles apart, and as a rule one or more firemen are relieved daily. As under the schedule, 100 miles or less constitutes a day's work, it follows that in a case of this kind the labor cost insofar as firemen are concerned, is doubled. This in itself would not amount to so much, provided there is no attendant train delay, but where it is necessary to tie up a train at some intermediate station until a fireman has been deadheaded from a terminal, it results not only in an increased labor cost, but it upsets the dispatcher's entire schedule, delaying not only the train in question, but often other opposing trains.

Going back to the Canadian test previously referred to, it was found that the maximum speed on the grades possible with the hand-fired locomotives was 12.42 miles per hour, while with the stoker-fired engine handling the same tonnage a speed of 15.61 miles per hour was maintained, or an increase in speed which is equivalent to an increase in ton-miles per hour of 25 per cent.

It is on account of the speed factor not being considered that in many instances the mechanical stoker has been charged with an increase in fuel consumption over hand firing. Ton miles or train miles or locomotive miles is a mighty poor yardstick by which to measure train or locomotive operation. The time element should always be taken into consideration and where this factor is considered and coal consumption as well as other operating costs are based on the ton miles per hour, it will be found that the stoker can show economies over the best hand firing.

In the beginning of this paper we referred to one possible reduction in operating costs through the possibility of burning a cheaper grade of fuel. During the last months in 1921 slack coal, or what is termed screenings, became a drug on the market and could be purchased at \$1.20 per ton less than the mine-run coal produced at the same mines. A saving of \$1.20 per ton held out a very attractive proposition to the railroads, but it was found that in hand-firing practice it could only be handled successfully in switch engines, as in road service the firemen experienced considerable difficulty in maintaining full steam pressure at all times in either passenger or freight service. Tests were conducted to determine whether or not the coal could be successfully used in connection with mechanical stokers, and it was found that with some types of stokers practically the same locomotive horsepower output could be obtained per pound of screenings as per pound of mine-run, and therefore on such roads as were equipped to handle both mine-run and screenings at their coaling stations, screenings were used in the stoker-fired locomotives, resulting in a net saving in fuel cost of 7.6 cents per locomotive mile—more than enough to offset the wages of the fireman.

The report is signed by James Fahey (N. C. & St. L.), chairman; A. L. Bartz (E. P. & S. W.), Joseph Keller (L. V.), William Towney (G. N.), and F. P. Roesch (Standard Stoker Company).

#### Discussion

The trend of the discussion bore out the conclusions in the report that fuel consumption with stokers firing, when measured on a ton mile basis, is more economical than hand firing. Of course, the only direct comparisons which can be made are with locomotives of less than about 50,000 lb. tractive effort, since engines of greater capacity are beyond the limit of practicability for hand firing.

Considerable attention was given to the question of spark losses in the discussion and it is evident that while these losses were large with some of the early stokers, they are now no longer serious, even when slack coal is being burned.

On the Baltimore & Ohio the steam from the stoker exhaust is being diverted into the stoker barrel, where it serves to moisten the coal slightly and to hold it in the firebox long enough for complete combustion to take place. It was suggested that eventually it will be impossible for the railroads to procure screened coal at the mine because of the difficulty of disposing of the screenings and that it will become necessary to purchase mine run coal. It was brought out that this is already the case in some districts. The railroads should, therefore be prepared to burn coal economically with any percentage of slack that may be produced at the mine.

The design of the grate is also receiving attention in connection with stoker firing. The Santa Fe is replacing finger grates with table grates having circular instead of slotted air openings in territory where Gallup coal is being burned. This has effected a reduction both in the spark losses and the loss of unburned fuel through the grate. The Pere Marquette is also applying the table grates on stoker fired locomotives. On the Wabash it was brought out that the standard finger grates are being replaced with Hulson grates. Stress was also laid on the need for high standards of stoker maintenance, particularly of the distributors, to insure that the fuel be uniformly distributed over the grate.

Very little was said about stoker failures. Although the members taking part in the discussion generally admitted that there are stoker failures, it is evident that they are of no more frequent occurrence than the failure of other parts of the locomotive and that they have not had any detrimental influence on the miles per engine failure.

[The reports on Operation and Maintenance of Oil Burning Locomotives and on Employing and Educating Engineers and Firemen will appear in an early issue of the *Railway Age*.—EDITOR.]

#### Other Papers

Reports were also presented on the following subjects: Flange Oilers; Radiolite for Illuminating Cab Gages, and Relation of Air Brake Defects to Traffic Delays and Fuel Consumption.

#### Election of Officers

The following officers were elected to serve for the year 1922-23: President, Frederick Kerby, (Baltimore & Ohio); first vice-president, T. F. Howley, (Erie); second vice-president, W. J. Fee, (Grand Trunk); third vice-president, J. N. Clark, (Southern Pacific); fourth vice-president, J. B. Hurley, (Wabash); fifth vice-president, J. D. Heyburn, (St. Louis-San Francisco), and treasurer, D. Meadows, (Michigan Central).

The membership of the executive committee for the coming year is as follows: B. J. Feeny, (Illinois Central); G. A. Kell, (Grand Trunk); James Fahey, (N. C. & St. L.); E. R. Boa, (New York Central); J. A. Cooper, (Erie), and J. H. DeSalis.

THE SOUTHERN PACIFIC will reduce freight rates on a number of commodities from eastern points to Oregon, the reductions ranging as high as 30 per cent and effective November 30.

TWO MILLION WORDS.—A number of words approximately equivalent to that in 26 novels was written by five court stenographers during the nine days of the government's injunction proceedings against striking railway employees; 2,100,000 words, said to be the biggest record in the federal court since the famous I. W. W. trial in 1918. The five stenographers in turn rushed back to their offices and dictated to a corps of 35 typists. In this way they turned out more than 750 pages of the record in a day, and certified copies of the proceedings were delivered to the court, the government attorneys and the attorneys for the defense by the next morning.



## Fire Insurance on the Burlington

THE PAPER on fire prevention, by W. T. Krausch, engineer of buildings of the Chicago, Burlington & Quincy, which was read at Baltimore on October 18 and was noticed in the *Railway Age* of October 26, was supplemented by a sketch of the fire insurance and fire prevention activities of the officers of that road, which sketch is reprinted below. This was in the form of a letter to an insurance agent from the vice-president of the road who supervises this work, and was as follows:

"This work is in charge of W. H. Klinsick, who is assisted by H. I. DeCamp, E. Bignell, S. H. Shults and R. M. Parker. Mr. Shults devotes his time to making fire inspections at large shops and terminals and attending monthly meetings of the division fire prevention committees on Lines East. Mr. Bignell devotes a portion of his time to similar fire protection work on Lines West and has been concentrating on the locomotive spark hazard in the lignite territory. Mr. DeCamp and Mr. Parker make fire inspections of important terminals and shop property whenever we feel that such are necessary to check up conditions.

"The inspectors from this office inspect all terminals, coaling stations, elevators, water plants and other important property twice each year and send their report to this office and a copy to the division superintendent. All other points not mentioned above are inspected by our special agents' organization once each year, who send a copy of their report to the division superintendent and one to this office. Fire inspections of bridges are made by the bridge foreman when making monthly inspection and by the master carpenter when making his regular bridge inspection in the spring and fall. All coaling stations where lignite coal is used are cleaned and inspected twice each month, and stations where bituminous coal is used are cleaned and inspected once each month. These inspections are made by or under the supervision of the master carpenter.

"We have organized fire prevention committees on each division, composed of representatives of each department, who meet once each month and discuss matters pertaining to fire prevention. Members of these committees inspect the buildings on their respective divisions and correct any existing hazards. These meetings are held according to a pre-arranged schedule and on the same day on which the committees on safety and fuel economy meet, so that the work of fire prevention is extended to a large degree by the members of these other committees. At each terminal or shop plant a fire marshal has been appointed who has charge of the fire fighting apparatus and the drilling of fire companies. He also makes semi-monthly inspection of all structures and fire fighting apparatus at his terminal and holds two fire drills each month.

"When reports of inspections are received from the underwriters they are immediately taken up on the ground with the division people and all items are carefully considered. Those not requiring large expenditures of money or new practices, are taken care of immediately. Copies of these reports, showing action taken on each recommendation, are forwarded to the vice-president of operation, the general manager and all concerned.

"Messrs. Shults and Bignell for years prior to their work in fire prevention had been active in the official position of division superintendent. . . ."

The Burlington road has over 5,000 buildings, as follows:

General offices.....	7
Passenger stations and freight stations, approximately.....	1,800
Roundhouses, shops, store and oil houses, etc., approximately....	720
Power plants (separate and distinct plants), approximately.....	40
Coal plants, approximately.....	200
Water plants, approximately.....	460
Grain elevators.....	6
Large stock yards.....	8
Miscellaneous buildings.....	2,000

## Hooper on the "Living Wage"

THE RECENT RULING of the Railroad Labor Board on the question of the "living wage" for maintenance-of-way employees, described in the *Railway Age* of November 4, page 837, has brought forth a torrent of denunciation by the Hearst chain of newspapers particularly in Chicago where the board has its headquarters. This attack has been abetted by statements from Samuel Gompers, president of the American Federation of Labor; Edsel Ford of the Ford Motor Car Company and many labor leaders.

The issues raised by these interests were finally answered by Ben W. Hooper, chairman of the Labor Board, who said:

Mr. Edsel Ford breezily remarks that the railroads would probably suffer "deficits for a while" if the so-called living wage were established. Plunging all the railway systems of the nation into a deficit does not disturb the equanimity of Mr. Ford. He makes no reference to the inevitable consequence of such a deficit, namely, higher freight and passenger rates.

It is now a matter of quite general knowledge that the margin of profit in the manufacture of tin Lizzies is much greater than it is in the operation of railroads. It is also pertinent to note that the man who pays for the operation and upkeep of a Ford is in a better position to sympathize with the men who run railroads than is the manufacturer of the Ford.

Mr. Ford should be able to speak of railroad deficits as one having authority. The records now show that the Ford railroad, although it has the benefit of the diversion of the tonnage of the Ford Motor Company, an advantage it did not enjoy before he purchased it, has experienced deficits at the end of several months. The deficit in December, 1921, was \$331,240; in July, 1922, \$16,367, and in August, 1922, \$300,404. It also goes without saying that the operation of this small railroad can not be taken as exemplary of the operation of the great railway systems of the country.

In so far as the opposition of Mr. Gompers to the Railroad Labor Board is concerned, it is sincere and understandable. He is opposed to anything that looks toward a limitation of the freedom of labor organizations to enforce their demands on the railroads and the public by strikes. The issue is clear between Mr. Gompers and those who believe that the public has a definite and positive right to efficient and uninterrupted transportation, which must not be destroyed by controversies between carriers and their employees. The latter view is not hostile to organized labor. No greater blessing can be conferred upon the employees of the railroads than to free them from the necessity of engaging in recurring industrial struggles at the cost of enormous loss and suffering to themselves and, at the same time, to guarantee to them just and reasonable wages and working conditions.

The attitude of the Hearst syndicate of papers is not quite so clear. The position of this syndicate of papers on the living wage bears many of the recognizable earmarks of political expediency, and this is an unsafe foundation for an economic policy.

The Board in its action on this question has not only served the best interests of the public in general, but has saved labor from the folly of some of those who pose as its friends. A wage award which would crush the railroads would ruin their employees. A wage award which would create an enormous deficit in every railway treasury would necessitate the imposition of higher freight rates on the farmers, producers and shippers of this country. Does this syndicate of papers advocate an increase in freight rates and the consequent increase of living costs to the masses? If not, from what source do they expect to obtain the 125 per cent increase which the so-called living wage would necessitate?

One of the expert economists who presented the matter to the Board for the employees stated that this would "throw a monkey wrench into the industrial machinery" and that the theoretical living wage should not be established all at once, but the minimum should be made 48 cents per hour.

In view of this situation does this syndicate of papers desire to throw the monkey wrench into the machinery? If not, why criticize the Board for refusing to do it. Let it be remembered that the Board contends that it has established "a living wage" for common labor—a wage, which, in an overwhelming majority of instances, is appreciably higher than the wage paid common labor in the same community in other industries.

A flat wage is as impractical as a flat dollar. Both have been tried out in Russia, where the laborer may get millions of roubles for an hour's work, but what will his flat wage and his flat rouble buy him?

The swelling tide of prosperity in our country can not be hastened by methods of this kind.

Subsequently, there has been a noticeable decrease in the space given to this controversy in the Hearst publications.

## General News Department

The Missouri & North Arkansas announces that passenger and freight service will be extended to Joplin, Mo., on November 15, thus completing resumption of service over the entire line from Helena, Ark., to Joplin, Mo.

The Illinois Central has announced that all shop employees who lost their pension rights as a result of a strike in 1911, but who remained at their posts during the strike last summer, will have their lost pension rights restored.

The New England Railroad Club will meet on November 14 at the Copley Plaza Hotel, Boston, at 6:30 p. m. C. F. Shirley, purchasing agent of the Forbes Lithograph Manufacturing Company, will speak on New England Railroads from a Commercial Agent's standpoint.

Five hundred dollars fine and three months' imprisonment were imposed as penalties for contempt of court, in the Federal Court at Macon, Ga., on October 28, against two striking shopmen of the Central of Georgia who had violated the injunction against interfering with railroad employees. The two men were found guilty of attacking two workmen several weeks ago. A third man who was tried was found by the jury not guilty.

Two train-robbers killed and no property lost, is the result of an attempt to loot the mail car of Train 805 of the St. Louis-San Francisco near Wittenberg, Mo., on the night of November 2. One of the robbers was well known, having served 12 years in the Missouri penitentiary, and post-office inspectors, who had been watching him for several weeks, were on hand at the scene of the robbery, with railroad and local policemen. They stopped the robbers a short distance away from the train and on their refusal to halt shot them. They had pulled the mail car several miles away from the rest of the train, and after taking the registered letters ran, with the locomotive, still farther, finally jumping off, leaving the engine to run wild.

The Careful Crossing Campaign has had some effect in limiting the number of persons killed and injured, as indicated by preliminary compilations made by the Safety Section, A. R. A., which managed the campaign. The figures do not show any remarkable gain in safety and they are based on only 204,091 miles of road—four-fifths of the Class I mileage of the country—but they indicate a definite diminution in both fatal and nonfatal injuries. For the period of the campaign, June 1 to October 1, there was an increase of 9.7 per cent (as compared with the same period last year) in the volume of railroad business as indicated by the car loadings, and an increase in registration for the same period of 2,009,021 automobiles and trucks, or 21 per cent; but the number of accidents at highway crossings increased only 3.6 per cent; non-fatal injuries 2.4 per cent and fatal injuries 3.6 per cent. This is an average of 3 per cent increase for non-fatal and fatal injuries. The total of the accidents reported for the period was 4,411, an increase of 153; total non-fatal injuries 1,800, an increase of 42, and total fatal injuries 693, an increase of 24.

### Commissioners Object to Cut in Valuation Appropriation

Chairman McChord and Commissioners Esch and Lewis of the Interstate Commerce Commission called on the President on November 4 to protest against a proposed reduction in the appropriation for the commission's railroad valuation work for the next fiscal year, which has been recommended by the Bureau of the Budget in its effort to reduce government expenses. The commission had asked an appropriation for this purpose of \$1,300,000 and the budget bureau had recommended that the sum

be reduced to \$750,000. The President was told that if the appropriation requested is allowed the underlying work of valuation would be completed by July 1, 1924. He will discuss the matter further with the officers of the budget bureau.

### Circus Train Wreck

Three persons were killed and four seriously injured when the westbound "Sunset Express" of the Southern Pacific crashed into the rear end of the Warham Carnival Company's special show train near Adeline, La., on October 31. The dead and injured were all members of the theatrical company.

### Tank Car Safety Valves

The Mechanical Division of the American Railway Association has issued a circular granting permission to companies having stocks of tank car safety valves of the 1920 design to place in service prior to July 1, 1923 any valves now on hand of that design. All patterns should be changed at once so that future castings will comply with the requirements shown in Supplement 1 to the Tank Car Specifications for 1920. Fig. 9-A and 10-A.

### Interstate Commerce Commission Accident Report

Houston, Tex.; Crossing of the Southern Pacific and the International & Great Northern, September 13. At this crossing, where the tracks lie nearly at right angles, a yard freight of the International & Great Northern, with 44 cars, moving slowly, about 4:50 p. m., ran into the side of a passenger train of the Southern Pacific; 27 passengers and one employee injured. Three passenger cars overturned. The inspector finds that the air brakes of the freight train were not in use, a violation of law, and that the engineman did not bring his train to a stop before passing over the crossing, also a violation of law. There are no interlocked signals at the crossing. The investigation disclosed that the movement of yard freight trains without using air brakes and without coming to a stop at the crossing was a common practice, and the officers of the road are held to merit severe censure.

### Air Brake Hearings Resumed

Hearings before Examiner Mullen of the Interstate Commerce Commission in connection with the commission's general air brake investigation were resumed at Washington on Wednesday, November 8. Witnesses representing the Automatic Straight Air Brake Company presented a number of voluminous exhibits covering air brake failures and the results of tests and were to be recalled later for cross-examination after the representatives of the roads had had an opportunity to check them. The first witness was a conductor for the Virginian who filed records of several hundred air brake failures on the Virginian and other roads. On being questioned as to whether he was able to testify to these records from his personal knowledge he said that about 75 of the failures occurred on his own train and that these cases had been checked in his exhibit and that the others could be identified by the notation "B. S." which he had used to indicate that the information was taken from the records of the Bureau of Statistics.

### Katy Employees Organize Union

Employees in the motive power and car departments of the Missouri, Kansas & Texas lines have completed the organization of the M. K. & T. Association of Metal Craft and Car Department Employees, "to promote the welfare and protect the interests of its members, to promote good feeling and constructive co-operation between the members and the officers of the railway, and, by joint action, protect and promote the interest of the



public." The organization was completed at a meeting held recently in Parsons, Kan., attended by seventy delegates, representing employees at practically all terminal and shop points on the system.

A system adjustment board was created under the provisions of the Transportation Act, and the by-laws of the association provide that this board shall act as the official representative of the association. It is the duty of the adjustment board to place before the officers of the railway all matters submitted to it by local adjustment boards concerning grievances and it will deal with all matters relating to interpretations of rules, rates of pay and working conditions.

The by-laws further provide that any disputes which cannot be settled in conference between the system adjustment board and officers of the railway, shall then be handled in accordance with the provisions of the Transportation Act.

### Mechanical Convention in 1923

The General Committee of the Mechanical Division of the American Railway Association decided at a meeting held in New York on November 8 not to hold in 1923 a convention of the kind ordinarily held in past years. It was decided to hold merely a business session of the Mechanical Section, at which reports dealing with interchange of cars, standard box cars and kindred matters will be received.

The explanation given for this action is that owing to the shop employees' strike no meetings of the committees of the section have been held to consider most of the regular reports, and that it will be impracticable to hold meetings of this kind during the rest of the present year. It was therefore decided that it would be impracticable to prepare the usual reports for the convention.

This decision, if left unchanged, means that the business session will be held at some place, possibly Chicago, instead of the convention being held at Atlantic City, as originally intended. It also means that no exhibit of equipment and supplies will be given and that the session to be held will last only two or three days.

### Gray and Gormley Speak to Chicago Shippers

C. R. Gray, president of the Union Pacific, and M. J. Gormley, chairman of the car service division of the American Railway Association, were the principal speakers at the annual meeting of the Chicago Shippers' Conference Association which was held on November 7, at the Hotel LaSalle, Chicago. Mr. Gray discussed the Southern Pacific-Central Pacific "unmerger" case, contending that Chicago shippers should be concerned in seeing that the Central Pacific is kept separate from the Southern Pacific.

Mr. Gormley dwelt upon the present car shortage situation, "the greatest in railroad history." On September 9, a total 683,689 cars were moved, while on October 25, 876,657 cars were moved, or an increase of 192,968. He said that 11 per cent of all the cars in service today are awaiting repairs, but with conditions steadily improving. He explained the recent orders issued by the car service division and appealed to the shippers to see that the cars at their disposal are loaded to capacity.

The new officers elected by the C. S. C. A. are as follows: President, R. C. Ross, traffic manager of Joseph T. Ryerson & Son; vice-president, G. A. Blair, traffic manager of Wilson & Co.; treasurer, R. W. Campbell, traffic manager of the Butler Paper Company, and secretary, W. J. M. Lahl, traffic manager of the American Seating Company.

### Revenues and Expenses for September

The Class I railroads in September had a net operating income of \$58,428,000, according to reports filed with the Interstate Commerce Commission. This represented a return, on an annual basis, of only 2.88 per cent on their tentative valuation. In September last year it was at the annual rate of 4.32 per cent, while in August this year it was 2.65 per cent. The railroads failed by \$58,000,000 of realizing a return of 5¼ per cent. September operating revenues were substantially increased but operating expenses increased 8.2 per cent. In September \$120,000,000 for maintenance of equipment was expended, an increase

of 15.7 per cent over the same month one year ago. The number of freight cars in need of repairs was reduced by 30,000 and of locomotives by 114. Expenditures for maintenance of way, however, were seven per cent under those of one year ago. Measured by net ton miles freight traffic in September this year increased more than 10 per cent.

During the first nine months this year, the railroads had a net operating income of \$529,413,000, compared with \$393,793,000 during the corresponding period last year. This is at the annual rate of return of 3.96 per cent, compared with 2.95 per cent. Carriers in the Eastern district in September earned net at the annual rate of only 1.98 per cent; those in the Southern district 4.66 per cent and those in the Western district 3.46 per cent.

Forty-four roads in September had operating deficits. Of this number, 23 were in the Eastern district, 4 in the Southern and 17 in the Western. In August, 49 had operating deficits.

### New Officers of Railway Equipment

#### Manufacturers' Association

At the annual meeting of the Railway Equipment Manufacturers' Association, held during the Traveling Engineers' Association convention at Chicago, on October 31, the following officers were elected for the coming year: F. W. Venton, (Crane Company), president; R. J. Himmelright, (American Arch Company), vice-president; J. W. Fogg, (Boss Nut Company), secretary, and George E. Haas, (Pyle National Company), treasurer.

The following members of the Association, not included in the list published last week, also had exhibits at the Hotel Sherman during the convention of the Traveling Engineers' Association:

American Steel Foundries, Chicago.—Models of brake beams, couplers, adjustable shelf coupler pocket, adjustable brake heads for passenger beams, vertical key yoke, and side frame and journal box.—Represented by W. G. Wallace, J. H. Tinker and W. C. Walsh.

Ashton Valve Company, Boston, Mass.—Locomotive steam and air gages, driving wheel quartering gage, safety valves, whistles, wheel press recording gage and gage testing devices.—Represented by J. F. Gettrust, H. O. Fettinger, and E. W. Nordstrom.

Johns-Manville, Inc., New York.—Insulations, packings and locomotive specialties.—Represented by J. E. Meek, J. C. Younglove, J. H. Trent, P. C. Jacobs, Charles E. Murphy, Harry Flannagan, L. S. Wilbur, P. R. Austin, H. J. Crowe and A. H. Purdom.

Sheafe Engineering Company, Chicago.—Locomotive cylinder and lubricator air pump steam cylinder lubricator.—Represented by J. S. Sheafe.

Standard Stoker Company, New York. Photographs and literature of mechanical stoker.—Represented by F. P. Roesch, H. N. Carmer and L. F. Sweeney.

White American Locomotive Sander Company, Roanoke, Va.—Locomotive track sander with new duplex operating valve.—Represented by James Frantz and W. L. Ransom.

### The New Santa Fe Shop Employees' Association

Our attention has been called to the fact that the article appearing in the *Railway Age* of October 21, page 768, omits the Atchison, Topeka & Santa Fe as one of the first railroads on which associations of shop employees were formed independent of the American Federation of Labor. The list of roads named at that time emanated from the Railroad Labor Board, as stated, but unfortunately the Santa Fe was not included in the board's announcement.

When the strike began, 2,300 mechanics remained in the service of the Santa Fe, and by August 22, the number of employees in the mechanical department had reached a total of 13,702 or 71 per cent of the normal force. These employees had already formed company unions among themselves and had made a request on the management to negotiate new agreements. Consequently on August 22 new agreements were signed with the shop craft associations, i.e., machinists, boilermakers, blacksmiths, sheet metal workers, electricians and carmen and their helpers and apprentices. Agreements were also made with the stationary engineers, firemen and oilers. The date of this action, therefore,

places the Santa Fe as one of the first railroads in the country to reach a satisfactory settlement of the strike. On October 19, the force in the mechanical department had reached 100 per cent, the road having at the present time 18,972 employees in the mechanical department.

In discussing the effect of the strike on the Santa Fe, one of the officers of that road recently said, "Never in the history of the Santa Fe System Lines has it been offered and handled as heavy a business as it has since the latter part of August. We have no embargoes in effect; we have no serious congestion of any kind; our condition of motive power is normal. Our bad order freight car situation, as of October 25, showed only 4.69 per cent of all cars on our lines in need of repairs the lowest point of record since the return of the roads to private control. We have 2,000 new box cars soon to reach us and we have ordered for delivery in the first quarter of next year 59 locomotives, 1,000 box cars, 1,000 automobile cars, 2,000 refrigerator cars, 500 double-deck stock cars and 500 coal cars."

### Decline in Number of Firms Manufacturing Cars

Census reports show the decrease in activities of establishments engaged in the manufacture of cars for use on steam and electric railways during 1921, as compared with the year 1919, according to the Department of Commerce.

In 1921 there were 105 establishments engaged in the manufacture of steam railroad cars and the total value of their products amounted to \$314,394,867, as compared with 99 establishments for 1919 with a total value of products of \$538,222,831. The decrease in the total value of products was \$223,827,964, or 41.6 per cent.

During this same period there were 10 establishments engaged in the manufacture of electric railway cars and the total value of their products was \$14,856,068 as compared with 7 establishments for 1919 with a total value of products of \$18,441,976; showing a decrease in the value of products of \$3,585,908, or 19.4 per cent.

The decrease in the value of products for both classes has been accompanied by decreases in the number of wage earners, in the total amount paid in salaries and wages during the year, and in the cost of materials used. In January, the month of maximum employment, 66,545 wage earners were reported, and in September, the month of minimum employment, 35,264—the minimum representing 53 per cent of the maximum employment. The average number of wage earners in 1921 was 46,863 as compared with 55,218 in 1919, a decrease of 15.2 per cent. A classification of the wage earners shows that 10,170, or 21.7 per cent of the total number were employed in establishments where the prevailing hours of labor per week were 48 and under; 20,295, or 43.3 per cent between 48 and 54; and 16,398, or 35 per cent, were employed in establishments where the prevailing hours of labor ranged from 54 to 60.

The number of cars manufactured during the year by both classes of establishments showed a decrease from 155,186 in 1919 valued at \$387,447,866, to 51,894 in 1921, valued at \$180,866,191. The decrease was chiefly in the manufacture of steam railroad cars. This class showed, in 1919, 153,288 cars made, valued at \$373,945,213, as compared with 50,361 cars, valued at \$170,325,626, for 1921. The decrease in the number and value of cars manufactured was 67.1 and 54.5 per cent, respectively.

These figures do not include the number and value of cars manufactured in repair shops of steam and electric railroad companies, or as secondary products by establishments classified in other industries. In 1919 establishments of this kind manufactured 6,345 cars valued at \$16,217,044.

### Brotherhoods Oppose Changes in Working Conditions

A controversy, which labor leaders claim represents the inauguration of an attack on the eight-hour day, came before the Railroad Labor Board on November 2 when W. G. Bierd, receiver of the Chicago & Alton and other officers of that road appeared before the board in support of a petition asking for the elimination of time and one-half for overtime in road-freight transfer and hostler service, the extension of the present eight-hour rule to nine hours in short turn-around passenger service and a modification of the working schedules in outlying switching yards on the road.

They asserted that time and a half in connection with the mileage basis for train and enginemen, is wrong; it pays for service never rendered; is a premium for not putting forth ordinary effort; and it prohibits the carriers from supervising train operation closely and economically. Enginemen and trainmen, it was argued, receive a rate of pay that is unfair to every other class of railroad employee. It was also contended that under present conditions the C. & A. is called upon to sacrifice the use of 12 to 20 engines a day and to put on two trains and crews to do what one train and crew had formerly done for many years.

The road also asked the board to grant a nine-hour rule for yard service in small outlying terminals where it has no continuous service. Under the eight-hour day the road cannot get full service from the crew at these small points.

A third question before the board is the double header rule, from which the C. & A. is asking to be released on its 300 miles of single track from Roodhouse, Ill., to Kansas City, Mo. Removing the double header restriction would increase the capacity of this 300-mile line.

In replying, representatives of the employees claim there is evidence tending to show that the punitive overtime rule has been beneficial by increasing the speed of trains, thereby saving in motive power, equipment, etc.

Referring to the road's contentions regarding the eight and nine-hour day, the employees reiterated the arguments on the right of workers to an eight-hour day, adding, "It does not make any difference whether the eight-hour day is in the control of the carrier or not; if a man works longer than eight hours he is drawing unreasonably upon his resources and he is therefore entitled to an increased rate of compensation."

Representatives of the men stated that the objection of the trainmen to double headers is a desire to reduce their hours of labor and that there is an added element of danger involved in handling trains with two engines.

### The Condition of the C. P. & St. L.

A possible solution to the difficulties of the Chicago, Peoria & St. Louis is the contemplated merger of that road with a larger line having east and west connections. The hearing on a petition to abandon the road is scheduled for November 13. B. A. Worthington, president of the Cincinnati, Indianapolis & Western, denied that his road had decided by buy the defunct line, but admitted that he had inspected the property and that the inspection report is now in the hands of his directors. He further said: "Unofficially, I will say that the Chicago, Peoria & St. Louis is much too good a road to be scrapped. In the interest of the public good, as well as from the standpoint of the railroads, it should be absorbed with some road with east and west connections. The road has about 247 miles of track, 75 per cent of which is in passable shape. The rolling stock is somewhat out of repair, but it could be put in shape and used with profit. The road has about 1,800 freight cars, 38 coaches and 51 locomotives. Control of 25 per cent of the stock in the Peoria & Pekin Union Terminal stock is valuable, as are also the St. Louis terminals. The road serves a territory which will show great development under proper conditions.

"The fate of the road rests with the bondholders, who hold the prior lien on the property, amounting to about \$2,000,000. If the road is scrapped, these people can get their money at once. If another railroad system were to take over the property, it would be necessary that these bondholders take stock in the new organization in place of their former holdings. It might mean a few years to wait, but the property would undoubtedly pay its way within a few years, and the stock would have a good value. The company taking over the Chicago, Peoria & St. Louis would have to put about \$3,000,000 in improvements and repairs. With the \$800,000 current debts which the road has, no big system will absorb it unless the present owners take part pay in stock in the new organization."

The bondholders are understood to be anxious that the property be abandoned and scrapped, as the scrap value will be ample to relieve the \$2,000,000 bonded indebtedness now outstanding.



## Traffic News

The San Francisco freight office of the Southern Railway is under the jurisdiction of J. L. Martin, Pacific Coast agent, 705 Monadnock Building.

The Chamber of Commerce of the United States has asked the federal coal commission to be allowed to present the views of organized business in the event the commission seriously considers any proposal looking to the nationalization of the coal industry.

The Illinois Central announces a new train, to go into operation on December 5, between Chicago and Jacksonville, Fla., to be known as the "Floridan." The train will leave Chicago Tuesdays, Thursdays and Saturdays about noon and will arrive at Jacksonville about 9 p. m. the following evening in time to make connections for other Florida points.

The Arkansas Railroad Commission has announced that it will oppose the Oklahoma Corporation Commission's petition to the Interstate Commerce Commission asking a readjustment of the freight rates for the entire southwest, declaring that the petition is directed toward practically the same ends as the "Memphis rate case." It claims that the purpose is to increase freight rates on all commodities moving into and through Arkansas.

The St. Clair River District Transportation Club was organized at Port Huron, Mich., on October 9. The following officers were elected: President, E. C. Miller, Mueller Metals Company, Port Huron; first vice-president, W. M. Markle, Diamond Crystal Salt Company, St. Clair, Mich.; second vice-president, W. W. Shingle, Pere Marquette Railroad, Port Huron; secretary, A. G. Thernstrom, assistant agent, Grand Trunk, Port Huron; treasurer, J. M. Barbee, Port Huron Chamber of Commerce.

Durant Motors, Inc., announces the personnel of its traffic department as follows: William J. Bailey, director of traffic, Long Island City, N. Y.; Fred L. Pomeroy, assistant director of traffic, Long Island City, N. Y.; Edward G. Rice, assistant to director of traffic, Long Island City, N. Y.; P. V. Demerest, traffic manager, Elizabeth, N. J.; Bert C. Sproul, traffic manager, Lansing, Mich.; Earl C. Allander traffic manager, Oakland, Cal.; Arthur C. Heath, traffic manager, Muncie, Ind.; Emmet F. Howley, traffic manager, Leaside, Ont.

The fuel situation has become stabilized to such an extent that the Chamber of Commerce of the United States has notified its members that surveys and reports are no longer necessary, as the program adopted in September to equalize coal distribution through co-operation among users in the period immediately following the strike has been successful. In a letter to business organizations Julius H. Barnes, president of the chamber, calls attention to the present adequate distribution of supplies and to the steady reduction of prices during the last few months.

Storage in transit is now allowed by the Canadian Pacific, on apples in carloads from British Columbia destined to Eastern Canada or to the Atlantic seaboard for export. Exporters are said to be arranging to establish big collecting warehouses in Winnipeg and other cities. The storage in transit privileges are allowed at Winnipeg, Regina, Moose Jaw, Lethbridge and Calgary. The shipper has the privilege of holding this produce in any of the cities named for a period of six months. The new regulations will, on and after November 17, apply on shipments to points in the United States.

The Atchison, Topeka & Santa Fe has announced that until December 31, 1922, one-half present tariff rates will apply on cottonseed cake, meal and hulls, corn and articles taking corn rate, hay and alfalfa from all points on that road in Texas, Oklahoma, Colorado and Kansas; also from Kansas City, St. Joseph, and Superior (Neb.) to Santa Fe points in New Mexico. Half rate basis will apply from Phoenix, Ariz., on cottonseed cake, meal, hulls and alfalfa. This emergency rate reduction is

made for the relief of the drought stricken livestock industry in New Mexico. The El Paso & Southwestern and the Southern Pacific have made similar reductions.

The Alabama, Tennessee & Northern announces that additional gasoline motor cars will soon be put in service. On May 1 this road bought and put into service between York, Ala., and Silas, a gasoline motor car, later extending the service to Millry and Healing Springs. The car has proved popular and the same kind of service is to be established from York north, serving Reform, Carrollton, Aliceville, Cochrane, Dancy, Panola and intermediate points. The latest car purchased has improvements over the first one. President J. T. Cochrane says that he does not expect to take off any steam trains; the motor car service is to be in addition to all other trains now in operation.

John T. Cochrane, president of the Alabama, Tennessee & Northern in an interview in the Mobile (Ala.) Register calls for a general freight car pool. He says: "The transportation system of the United States as a whole is under obligation to take care of all shippers as near proportionately equal as practicable, and the only way to do this is to mobilize the cars of the various railroads of the United States under an effective and authoritative central management as can be done by the Interstate Commerce Commission. Cars can be handled through railroads just as the Federal Reserve system handles money through the banks. The A. T. & N. owns more than enough cars to take care of the large production on its railroad, but now its cars are scattered all over the country and we cannot get them back. We are contending that all the cars, including ours, be put into a pool and sent by those in authority to the points where needed most. Until this is done all our railroads are going to continue to have the same hard fight we are having from day to day to get empties."

The wealth of Kaolin in the ground along its lines is the chief topic of the latest newspaper discussion issued by the Central of Georgia. Georgia is generally regarded as an agricultural state, but its mineral products in 1920 were valued in excess of \$13,000,000 and clay products (brick and tile) made up approximately 35 per cent of this amount. The development of the clay industry means more to a greater territory and to a larger number of people than any other mineral. The road has been co-operating with the government in a series of tests and states with full assurance that Georgia kaolins when properly prepared can compete with the English china clays in the filler trade and the manufacture of pottery, electric porcelain, floor tile, wall tile, and sanitary ware. An even more inviting field for development is afforded by the refractory clays which possess primary requisite for the manufacture of fire brick, for electric, chemical, metallurgical and industrial furnaces—the ability to withstand fusion at high temperature. There is enough clay in Georgia to supply the needs of the nation for generations to come. Pamphlets describing the clay resources, the tests and the preliminary results, may be had from J. M. Mallory, general industrial agent of the road, Savannah.

### The Illinois Central's November Manifesto

The Illinois Central in its latest general newspaper advertisement assures the public that the officers are leaving nothing undone in their efforts to meet the situation. Since the October statement was published 75 large freight locomotives have been bought, making a total of 140 locomotives purchased this year. "However, we are handling the largest traffic in the history of this system, and our patrons doubtless will continue to be inconvenienced by the general shortage of transportation facilities.

"In the seven years ended with 1921 the number of locomotives in the United States increased only 275 a year, and the number of freight cars only 6,000 a year. The increase in the number of locomotives in the seven years ended with 1921 was only one-ninth as great as in the seven years ended with 1907, while the increase in the number of freight cars was only one-fifteenth as great. The decline in the amount and capacity of the equipment provided has been accompanied by a corresponding decline in other facilities. \* \* \* When the confidence of investors in railway securities is fully restored, large expenditures for additions and betterments can be made, and the railroads will then be able to supply all necessary transportation. This is the 'railway question' in a nutshell. \* \* \*

### Operating Statistics for August and Eight Months

The net ton miles of revenue and non-revenue freight handled by the railroads in the month of August totaled 30,452,000,000 as compared with 30,420,000,000 in August, 1921, according to the monthly bulletin of operating statistics issued by the Interstate Commerce Commission. The car miles per car day averaged 21.8 as compared with 22.7 last year, the net tons per loaded car 26.3 as compared with 27.4 and the net ton miles per car day 406 as compared with 400. For the eight months ended with August, the net ton miles totaled 227,739,000,000 as compared with 222,411,000,000 last year.

### Southern Freight Association

The Southern Freight Association has recently been organized by the railroads operating in the territory south of the Ohio and Potomac Rivers and east of the Mississippi as a successor of the Southern Freight Rate Association, to have jurisdiction over rate adjustments in that territory. Charles Barham, heretofore general freight agent of the Nashville, Chattanooga & St. Louis, has been elected chairman of the association and also of its executive, general and standing rate committees. L. E. Chalenor, who was secretary of the old association, was elected secretary of the new one.

### "Sell Recreation"

M. E. Westbrooke, director in charge of the National Travel and Out Door Life exposition, which will be held in Chicago May 7-12, inclusive, has asked the support of the railroads. At a meeting of traffic men held in Chicago on October 26 he said:

"Sell recreation and you will have sold travel. Recreation is a commodity and should be sold as other commodities. The scenery, highways, hunting and fishing grounds, golf links and polo fields constitute a commodity of which there is an unlimited supply awaiting purchasers. Sell the playgrounds of the United States and Canada and you have sold travel. Outdoor life is a commodity which in the past has been bought much as the farmer purchased his requirements from a mail order catalog, only to meet with disappointment.

"The National Travel and Out Door exposition in its exhibits will symbolize all the principal forms of outdoor recreation. The playgrounds of America and Canada will be visualized to give the purchaser of recreation a realistic picture of what the various sections afford."

### Coal Production

Preliminary returns to the Geological Survey on coal production in the week ended November 4 indicate a total of 12,500 net tons, of which about 10,700,000 tons is bituminous coal and 1,800,000 tons is anthracite. Revised estimates for the fourth week of October show 10,681,000 tons of bituminous and 1,773,000 tons of anthracite. Thus a slight increase in the total coal raised is shown for last week as compared with the week before.

The increased rate of production during the past three weeks is said to be principally due to improvement in transportation. The rate of output of soft coal is now about equal to that of 1918 and higher than in 1921, but lower than in 1919 and 1920.

The production of anthracite in the fourth week of October is estimated at 1,773,000 net tons which is a decrease of 11 per cent as compared with the week preceding.

Reports for the week ended October 21 indicate continued improvement in transportation in most of the territory east of the Mississippi. The most notable exceptions were in Westmoreland County, Pennsylvania, and the Tug River district of West Virginia, where transportation losses increased to 49.4 and 72.8 per cent, respectively. In the trans-Mississippi states the rail situation grew steadily worse and losses charged to transportation disability ranged from 1.7 per cent in Iowa to 57.4 per cent in Utah.

The movement of bituminous coal across the Hudson River into eastern New York and New England decreased during the week ended October 28. The cumulative movement for this year to date now stands at 67,872 cars of anthracite and 85,184 cars of bituminous coal through the Hudson gateways, and 282 cars of anthracite and 1,963 cars of bituminous coal through Rouses Point.

The fourth week of October was the seventh successive week

in which the tonnage of soft coal dumped into vessels at Lake Erie ports exceeded 1,000,000 tons. Anthracite shipments from Buffalo during the week ended October 31 were 94,200 net tons against 119,100 tons in the week before.

Shipments of bituminous coal through Hampton Roads in the week ended October 28 increased about 6 per cent as compared with shipments in the 2 weeks preceding. In the last week reported dumpings totaled 276,072 net tons as compared with 261,524 in the week preceding.

Reports received by the Car Service Division of the American Railway Association show that under the program agreed upon following the settlement of the miners' strike, the railroads have only 2,000,000 tons to deliver in order to fulfill their agreement. This means the delivery of approximately 666,700 tons a week.

The Car Service Division reported on Nov. 7 a total coal loading for the week of 237,010 cars. This exceeded by 13,599 cars the week which ended on October 21, the previous high mark. Bituminous amounted to 193,103 cars, an increase of 2,827 over the week before, and a daily average of 32,184 cars. This was an increase of 1,139 over the daily average for October one year ago. Anthracite totaled 33,907 cars, an increase of 980 cars over the week before, when Mitchell Day was observed. The average of 5,651 cars daily exceeding the daily averages for both November, 1920 and 1921.

On Monday of this week 43,810 cars were loaded with bituminous coal. Except for the preceding Monday, when 45,298 cars were loaded, this was the largest number of cars loaded on any one day since December 13, 1920.

### Commercial Coal Stocks

A canvass of commercial stocks of anthracite and bituminous coal undertaken by the Bureau of the Census and the Geological Survey, indicates that on October 1, commercial consumers had in storage approximately 28,000,000 tons of soft coal, according to an announcement by Fuel Distributor C. E. Spens. This figure compares with 27,000,000 tons on October 1, 1916, and with 28,000,000 tons on October 1, 1917. On September 1, stocks amounted to 22,000,000 tons. The trend of production has continued upward and it is estimated that the increase in storage from October 1 to November 1 will at least equal the increase from September 1 to October 1. The stocks on hand on November 1—approximating 35,000,000 tons—comprise the quantity in the hands of commercial consumers, and does not include coal in the cellars of domestic consumers nor steamship fuel.

"On January 1, 1922," said Mr. Spens, "commercial stocks amounted to 48,000,000 tons, and by April 1, when the strike began, to at least 63,000,000 tons. The average weekly production at present is approximately 10,500,000 tons or roughly, 2,000,000 tons in excess of current consumption."



The Reading's New Drawbridge Over Darby Creek, Chester, Pa.



## Commission and Court News

### Interstate Commerce Commission

#### Applications for Relief from the Fourth Section

In the interest of economy and expedition, it has been the practice of the commission to pass upon certain applications for relief from the provisions of the fourth section of the act without hearing. Applications based upon the circuitous character of the petitioner's route are so handled.

While no objections have come to the attention of the commission, some misunderstanding appears to have arisen concerning the status of orders granting relief in such cases. To clear up such misunderstanding the commission announces that where applications are passed upon without a hearing, the orders issued are not to be considered as final but are subject to modification upon complaint after notice and hearing; or without hearing if, because of changed conditions or other adequate reasons, such modification may seem necessary and proper.

In order to afford the public more information with respect to applications for relief under the fourth section, arrangements have been made to issue and place upon the press table in the secretary's office daily synopses of applications as received.

#### Leases of Property by Railroads to Shippers

The Interstate Commerce Commission has issued a report on its investigation instituted prior to federal control concerning the propriety of practices of carriers in leasing their facilities and other properties to shippers of freight over their lines. The commission holds that no justification exists for the leasing of railway lands to industries at a nominal rental charge. The commission held hearings at New York, Washington, Fresno, Calif., and Spokane, Wash., after which the intervention of federal control delayed action and the commission has since been advised that various changes have occurred as a result of the hearings so that the record does not in all respects accurately reflect the present situation. For the sake of brevity, the report deals only with the situation at Spokane as it was disclosed at the hearing. It is stated that this situation fairly illustrates the questions of law and of public policy involved and affords an adequate basis for the discussion of the questions. The commission goes no further in this report than to indicate some of the underlying principles which, in its opinion, should govern carriers in the leasing of lands to shippers and which are illustrated by the evidence which has already been summarized:

1. No justification exists for the leasing of railway lands to industries at a nominal rental charge. It is conceded that traffic considerations are the moving cause, in such cases, so far as the carriers are concerned. Where the traffic of the lessee is in part the consideration the transaction amounts to a concession to the shipper-lessee, in violation of the law.
2. A provision in a lease whereby a shipper agrees to route over the lines of the lessor or its connections all or any part of his traffic amounts to an acknowledgment that the consideration was in part the exchange of traffic for right to occupy the land.
3. The determination of the value of leased premises by mutual agreement of the shipper and carrier, and revaluation from time to time is an arrangement open to serious abuse.
4. Every effort should be made by carriers to obtain terms no less favorable than would be obtained were the land owned independently of the railroad.

The facts disclosed by this investigation strongly support the general conclusion that the above principles have not been sufficiently observed by the carriers, and that leases have often been a medium of unwarranted concessions to shippers. There is reason to believe that this investigation has led to improvements in the practices of carriers. Shippers and others who believe that they are subjected to undue prejudice and disadvantage can be of assistance by bringing such situations to our attention. The proceeding will be discontinued. No order is issued.

### State Commissions

The Illinois Commerce Commission has approved an agreement between the Chicago, Aurora & Elgin and Alfred E. Pfahler, whereby the railroad company is to lease 20 passenger cars and one electric locomotive. The railroad is authorized to issue and deliver to Mr. Pfahler \$470,000 in equipment trust certificates.

#### Railroads in Wisconsin Ordered to Repair Cars

Railroads operating in Wisconsin were ordered last week by the railroad commission of that state to take immediate steps to relieve the freight car shortage situation by repairing the cars now idle because of unfitness for service. The roads are called on to make daily reports on the results of their car repair work.

#### Illinois Commission Appeals to I. C. C.

The Illinois Commerce Commission has asked the Interstate Commerce Commission and the American Railway Association to modify the car service orders which have been put into effect. It is requested that eastern railroads be required to supply some of their own cars for use in the west, especially for grain movement; also that the Pennsylvania, the Baltimore & Ohio and the Cleveland, Cincinnati, Chicago & St. Louis, among the eastern lines, be relieved from the emergency requirement, now in force, of returning box cars belonging to western roads empty on condition that they move grain in them toward the midwest terminals.

### Court News

#### Price for Coal Taken by Railroad

In an action by the shipper of coal against the carrier for the confiscation of the shipment en route by the carrier, which used it as locomotive fuel, the evidence showing that the confiscation was not malicious, the Circuit Court of Appeals, Fourth Circuit, holds that the measure of damages was the market value of the coal at the time and place of confiscation. If the coal had not been taken, it would have gone into certain pools at point of destination, after which the shipper would have been entitled merely to a credit in the pools for an equal amount of coal of corresponding grade. The shipper's actual loss was therefore the market value of the credit.—*Norfolk & Western v. Ft. Dearborn Coal & Export Co.*, 280 Fed., 264.

#### Commission's Order for Union Stations Held Void

The statutes of Minnesota do not expressly confer upon the Railroad and Warehouse Commission the power to require intersecting railroads to maintain a joint station at the point of crossing, and whether this power is implied in the general control vested in them the Minnesota Supreme Court does not decide, but conceding the implied authority, it holds that an order requiring the Chicago Great Western to construct on its property a station, one fourth of the cost to be borne by the Chicago & North Western, to be maintained at the sole expense of the former, and with no provision for joint occupancy, is an unlawful invasion of the property rights of the two companies, and void.—*Palmerlee v. C. G. W. (Minn.)* 188 N. W., 328.

#### State Statute Regulating Car Repair Shops

The federal district court of the District of Minnesota, Third Division, holds that the requirement of the Minnesota statute of 1919, as amended 1921, c. 481, requiring buildings for the construction or repair of railroad cars, is in conflict with section 4 of the Safety Appliance Act, requiring defective cars on interstate carriers' lines to be repaired at the place where the defect is discovered, if feasible, or at the nearest available repair point, and, the federal statute being paramount, the state statute is void as to this requirement.

The whole statute was held void because the section providing for the protection of employees from working outside in inclement weather is too uncertain and indefinite to be valid, this section embodying the real ground of the statute.—*C. & N. W. v. Railroad & Warehouse Commission of Minnesota*, 280 Fed. 387.

## Labor Board Decisions

### No Authority Over Lines Outside of U. S.

In a case concerning track forces on the Great Northern lines in Canada, the Labor Board held that it had no authority over the rates of pay and working conditions for employees engaged exclusively in work outside the territorial limits of the United States.—*Decision No. 977.*

### Contracting Extra Gang Work

On May 30 and 31 an extra track gang employed on the St. Louis-San Francisco whose laborers were being paid 45½ cents an hour was discharged and the work being done by this gang was turned over to the Walsh Construction Company, which employed negro laborers at a rate of 20 cents an hour. The railroad contended that it had contracted similar work previously and that its action was in accord with the provisions of the Transportation Act obligating the management to operate the property as efficiently and economically as possible. The decision of the Labor Board is the same as in Case No. 1254.

### Contracting Coal and Water Supply Work

The Chicago & Alton awarded a contract to Joseph Colianni & Brothers for the handling of coal, sand and cinders, the pumping of water and for engine watchmen, the employees of the railroad having the privilege of going to work for the contractors at a reduced rate of pay. This was brought to the attention of the Labor Board which decided that this case involved the same principles that applied in the case of the Indiana Harbor Belt, that the contract constituted a violation of the Transportation Act, insofar as it purported to remove the employees from the application of the act; and directed the carrier to take up with any employee the matter of reinstatement upon the application of the employee or his representative.—(*Decision No. 1254*)

In 1921 the St. Louis-San Francisco advertised for bids for the personal labor required for the operation of individual water stations on a monthly basis. This case (No. 1230) the Labor Board decided substantially the same as that of the C. & A.

### Dismissal of Bridge Employees

#### for Refusal to Work Overtime

About 7:15 p. m., on July 29, 1921, 645 ft. of double track trestle on the Stockton division of the Southern Pacific near Banta, Cal., was discovered on fire and 135 ft. was destroyed before the fire was extinguished. It was necessary to call men from adjoining divisions to restore the trestle and track as promptly as possible. Foremen and men were brought from the Sacramento division, arriving at nine the next morning. These men worked until 4 p. m., when they returned to their outfit cars and refused to perform further service at the pro rata rate, notwithstanding that an emergency existed; and for this action they were discharged. In a decision upon a protest registered by the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers the Labor Board decided that the management was justified in the action taken in this case and denied the request of the employees' organization for the reinstatement of the men.—(*Decision No. 1118.*)

INSTRUCTION IN TRAFFIC MANAGEMENT is now being given by Charles F. Walden at the West Side Y. M. C. A., New York City, and he is preparing a course in the subject which will be available through the United Y. M. C. A. Schools to ambitious men in all parts of the country. Mr. Walden for about 20 years was in the freight traffic department of the Pennsylvania Railroad and subsequently was the president of one of New York city's largest transfer and forwarding corporations. He is offering the class a practical course dealing with every-day problems. He finds that industrial and merchandising concerns are rapidly awakening to the necessity for the services of a traffic expert.

## Foreign Railway News

### English Firm to Build 17 Locomotives for Spain

Messrs. Babcock & Wilcox, a British concern, have received an order from the Northern Railway of Spain for 17 locomotives. These locomotives will be built at the company's Spanish works at Galindo, near Bilbao. These locomotives will be the most powerful in use in Spain, according to the Times (London) Trade Supplement.

### Death of Former American

#### Representative of British Road

Alfred G. Wand, for 20 years general agent in America for the London & North Western, died on October 13. Mr. Wand came to this country in 1898 and remained until his retirement on account of ill-health in 1918. His office was in New York City. He had been in the service of his company for more than 45 years.

### Electrification of Argentine Transandine Railway

An increase amounting to 1,500,000 gold pesos over the sum already allotted is provided by a proposed law recently submitted to the Argentine congress, to be used for the electrification of the Argentine Transandine Railway between Zanjón and the Chilean frontier, according to Commerce Reports. A contract between the government and the Argentine Transandine Railway has already been approved under the provisions of the law of October 13, 1921. This agreement provides for joint administration of the Chilean and Argentine Transandine roads, connecting Mendoza and Los Andes. It stipulates that the government shall place at the disposition of the railway company bonds of the Argentine external loan, not to exceed 2,500,000 gold pesos, bearing interest at the rate of 5 per cent per annum, with 1 per cent amortization.

The new line, for which the additional 1,500,000 pesos has been requested, is approximately 45 kilometers in length and connects with the section of the Chilean line, which is also to be electrified.

### Death of Well Known British Railway Executive

Charles Aldington, until his retirement in 1921, general manager of the Great Western Railway, died on October 16 at Marazion, Cornwall, where he had resided since his retirement. Prior to his appointment as general manager of the Great Western Railway, Mr. Aldington had held the post of superintendent of the line for nine years, including the whole of the war period. During this period his efforts were directed toward ensuring the smooth operation of troop trains and the carriage of munitions of war, and throughout the war he resided on the premises at Paddington Station, London, so that his services could be available at all hours of the day and night. He became general manager in 1919 on the death of the late Frank Potter, but his health had been undermined by his incessant toil during and after the war. He became seriously ill and retired in June, 1921.

Born at Tamworth, Warwickshire, 59 years ago, Mr. Aldington was educated at Packwood School and joined the staff of the Great Western Railway on the Birmingham division in 1876. After a probationary training at Handsworth and Knowle stations he was transferred to the divisional office at Birmingham in 1879 and to the Northern division staff at Chester in 1881. In 1894, Mr. Aldington was appointed chief clerk in the London divisional superintendent's office. From 1899 to 1902 he was traffic superintendent of the Central London (Electric) Railway. In 1903 he returned to the Great Western and had a year's experience in the general manager's department. Mr. Aldington was in 1904 appointed assistant superintendent of the line. On January 1, 1910, he was promoted to superintendent of the line. His term of office as superintendent of the line coincided with the time when great strides were made in developing the Great Western passenger train service, and in extending the numerous road and rail motor services which Mr. Aldington inaugurated soon after his return to the Great Western in 1902.



Mr. Aldington visited the United States and Canada several times and took a keen interest in American railway affairs. His first visit on this side of the Atlantic was in 1900, when he went on an electric traction mission in the interests of the Central London Railway. In 1905 he came to the United States as one of the delegates to the International Railway Congress at Washington, and also in 1909 and 1911 on the business of the Great Western.

### Lower Passenger Fares in Britain

Reductions in passenger fares and in the rates charged for perishable freight by passenger trains have been announced by the British railways, effective January 1, 1923. In general, these reductions will bring the level of rates down to 50 per cent above those of pre-war days, instead of 75 per cent above, as at present. In addition to the reductions, there will be a standardization of passenger rates to the basis of 1½d. per train mile, third class, and 2½d. first class. Where present rates are below this standard, they will be raised or lowered under the new tariffs and no rates will be reduced below this basis. On the other hand, all rates will be lowered to this basis, whether the standard reduction would make them that low or not.

It is estimated that the reductions will bring about a loss of revenue of £10,000,000 and negotiations are now in progress between the railways and the railway unions in an endeavor to bring about some reductions in wages in an endeavor to absorb a portion of this loss.

There is some speculation around London concerning the effect which the new tariffs will have on suburban fares, these, in many cases, being considerably lower than the standard rates announced.

Round trip tickets under the new tariff will bear the double rate in all cases. Tourist and excursion fares will be reduced proportionately to ordinary fares. There will be no change made in the rates for season and commutation tickets.

### China Notes

PEKING.

Although the financial situation of the ministry of communications has not changed perceptibly during the past few months, the morale has improved considerably. Following the flight of the minister to Peitaiho following the attack upon him by the school teachers of Peking, he resumed office only after having secured certain guarantees of support which tended to clear the situation by making apparent that Wu Pei Fu is "boss." Next he secured from the cabinet a revocation of the pledge to the teachers made by Yeh Kung Cho. In order to take care of the educational needs of the metropolitan area, the cabinet has arranged for a regular pledge from the foreign administered customs revenue. The return of Kao En Hung to the ministry under these conditions has served to break the semi-conscious "going slow" strike which the old "Chiao Tung" clerical staff were conducting in the ministry. Several bureaus are accomplishing as much with less than half the former staff, sleeping during office hours has become perilous, desks are cleared with some regularity, and a general air of cheerful industry prevails. Kao has also set a precedent about preserving "face" and has given an unusual example of "thick skin" for Chinese officialdom.

For the first time in their history the railways of China are facing a concerted strike movement. It began, as reported last month, on the Peking Suiyuan line as a protest against the American Car Loan. No sooner was the government in control, than the Peking Hankow line was paralyzed by a walk-out of shopmen and engine drivers. The representatives, when questioned, could give no coherent account of what they wanted, most of their demands having been met a long time ago by action of the management. This settled, the Lung Hai line underwent the same experience, the complaint being against certain foremen whose dismissal was demanded. A settlement was soon arranged, and by this time the Canton Hankow employees walked out demanding dismissal of certain officials and more prompt payment of salaries. The management endeavored to use vigorous measures, with the result that 150 strikers laid down on the track in front of the train which it was attempting to run. The local military were called upon to disperse the threatened suicides with the result that ten were killed and a score or more injured. This strike is still on, and the connecting line next on the east,

the Chuchow Pinghsiang, saw its employees in turn "down tools." Thus the movement had run the length of the "west side" lines beginning at the north and proceeding in regular order to the south. Reports have it that the shopmen of the Peking Mukden line have now presented demands.

At the same time, sympathetic strikes are numerous. The workmen at the Pinghsiang collieries are out, demanding an increase of ten coppers a day—they now receive twenty coppers or about seven cents, gold, per day in the lowest grades. This will probably be granted for if the mines were to be flooded, the Hangyang Steel Works would be helpless for want of fuel. The Canton Hankow as well as the Chuchow Pinghsiang Railway would also lose their principal freight traffic. The Hangyang Steel Works also had a partial walk-out and the Yang Ste Engineering Works are closed for the same reason. The employees of the Hankow Water Works are the latest to be on the rampage. It is well known that certain prominent Russians are spending a great deal of money in small checks on London accounts which are being cashed by coolies. Recently, prominent Chinese educationalists and ex-officials gave public recognition to the Bolshevik movement in terms which identified their interests as being in common. If there is an aristocracy in China it is to be found among the scholar class. At first it seems incredible that this class should be cultivating friendship with Bolshevism. However it must be remembered that China is now under the control of the scholar-official class no longer, but instead is at the mercy of the soldiery, most of whose representatives are near-illiterates. So far, no one has been able to see how the soldier nuisance is to be abated, except by such a demoralization of the country that starvation finally works on the soldier. However, it may possibly be that by giving leadership to the unlearned and unorganized working classes in this way, the scholar class may be able to forge a weapon which can match the arms of the militarists.

However, the ministry of communications is treating the subject of labor disturbances in good faith and along conventional lines. During the past week a conference has been called consisting of eighty-seven representatives of the departments in the several lines together with a few members of the ministry staff, to consider ways and means of improving the conditions of labor on the railways. The meeting had for its object principally the preparing of the officer's minds for the measures which appear sure to come. After considerable discussion it was decided to prepare rules and regulations for a civil service, standard scales of pay, standard leave (vacation) privileges, forms of education for younger employees and for employees' children, and a pension or provident fund system. Considerable attention was given also towards working out piece rates to be applied rather than time wages, as well as bonuses to distribute a portion of the profits during favorable years. Many of these subjects are not new in Chinese experience, but because most of the railway organization has been directed by foreigners, foreign methods of pay rather than the traditional Chinese methods rule at present.

A further contract covering the construction of the Kirin-Huening line in Manchuria has lately been concluded between Japanese interests and the province of Kirin, in which it is agreed that "Japanese shall have charge of the business management and engineering work of the railway." Whether or not the conclusion of this agreement with the province indicates that the Japanese consider Chang Tso Lin's declaration of independence final, it does indicate that these interests have come to the conclusion that some authority nearer to the people of the district than the Peking government must be considered. Considerable local opposition is reported.

Chinese and Japanese in Harbin have organized a Tram and Electric Light Company. The principal interest to Americans in the subject centers around the fourth clause of the agreement, which reads: "The agreements concluded between the China Electric Co. and the American merchants with regard to the purchase of plant, raw materials, etc., shall become null and void."

Who said "Open Door"? The China Electric Company, which is a combination of the Western Electric and the ministry of communications, Peking, held this contract up to a recent date.

In making arrangements for the removal of foreign post offices from China effective January 1, 1923, in pursuance of the agreements made at the Washington conference, the Japanese have refused to consider withdrawing those in the railway zone of the South Manchurian Railway. The Chinese have acquiesced "in order not to jeopardize the friendly relations existing between the two nations."

## Equipment and Supplies

### Locomotives

THE OLIVER IRON MINING COMPANY may purchase 10 switching locomotives.

THE GRAND TRUNK is inquiring for 10 Mountain type and 10 Santa Fe type locomotives.

THE MONTGOMERY RAILROAD, reported in the *Railway Age* of September 30 as inquiring for 4 locomotives, has ordered 4 Mikado type locomotives from the American Locomotive Company.

THE PERE MARQUETTE, reported in the *Railway Age* of October 14 as inquiring for 22, 8-wheel switching locomotives, has ordered 20 switching locomotives from the American Locomotive Company.

THE WESTERN PACIFIC, reported in the *Railway Age* of October 21 as contemplating buying 5 Mikado type locomotives, has ordered 6 Mikado type locomotives from the American Locomotive Company.

THE VILLA YON ATOCHA (Argentina) has ordered one Mikado type locomotive from the American Locomotive Company. This locomotive will have 21 by 24 in. cylinders and a total weight in working order of 155,000 lb.

THE VILLA YON ATOCHA (Chili) has ordered one Mikado type locomotive from the American Locomotive Company. This locomotive will have 21 by 24 in. cylinders and a total weight in working order of 155,000 lb.

THE FRUIT GROWERS EXPRESS COMPANY has ordered one 4-wheel switching locomotive from the American Locomotive Company. This locomotive will have 11 by 16 in. cylinders and a total weight in working order of 41,000 lb.

THE AMERICAN WOOLEN COMPANY, Boston, Mass., has ordered one 4-wheel switching locomotive from the American Locomotive Company. This locomotive will have 16 by 24 in. cylinders and a total weight in working order of 99,000 lb.

DENASTON BREAKEY, Breakeyville, Que., Canada, has ordered one 4-wheel switching locomotive from the American Locomotive Company. This locomotive will have 14 by 22 in. cylinders and a total weight in working order of 79,000 lb.

THE PENNSYLVANIA-OHIO ELECTRIC COMPANY, Youngstown, Ohio, has ordered one 4-wheel switching locomotive from the American Locomotive Company. This locomotive will have 14 by 22 in. cylinders and a total weight in working order of 65,000 lb.

THE NEW YORK, NEW HAVEN & HARTFORD, reported in the *Railway Age* of October 7 as having ordered 5 electric locomotives from the Westinghouse Electric & Manufacturing Company, has ordered 7 additional electric locomotives from the same company.

THE MEXICAN RAILWAY COMPANY, LTD., has ordered 10 electric locomotives. These locomotives will be constructed and equipped jointly by the General Electric Company and the American Locomotive Company. The locomotives will have a total weight in working order of 300,000 lb.

### Freight Cars

THE PITTSBURGH STEEL COMPANY is inquiring for 25 gondola cars of 75 tons' capacity.

THE SOUTHERN PACIFIC contemplates coming in the market soon for about 3,500 cars.

THE UNION TANK CAR COMPANY is inquiring for from 500 to 2,000, 50-ton tanks cars of 10,000 gal. capacity.

THE DETROIT, TOLEDO & IRONTON is inquiring for 500 box cars of 40 tons' capacity and 500 hopper cars of 55 tons' capacity.

THE CHICAGO, MILWAUKEE & ST. PAUL, reported in the *Railway Age* of October 28 as inquiring for 3,000 gondola cars, 1,500 box cars and 500 automobile cars, is now reported to be considering the purchase of 7,000 gondola cars of 50 tons' capacity and 3,000 box cars of 40 tons' capacity, although the original inquiry has not been increased.

THE LOUISVILLE & NASHVILLE, reported in the *Railway Age* of October 28 as inquiring for 2,000 steel hopper cars of 55 tons' capacity and 1,000 box cars of 40 tons' capacity, has ordered 2,100 hopper cars from the American Car & Foundry Company and has ordered 500 box cars each from the Chickasaw Shipbuilding Company and the Mt. Vernon Car Manufacturing Company.

### Passenger Cars

THE CHICAGO & NORTH WESTERN, reported in the *Railway Age* of October 14 as inquiring for 36 coaches and 10 baggage cars, has ordered 40 coaches and 10 baggage cars from the American Car & Foundry Company.

THE NEW YORK CENTRAL is asking for bids until 12 o'clock noon November 27 for the requirements of the New York Central, the Michigan Central, the Cleveland, Cincinnati, Chicago & St. Louis and the Pittsburgh & Lake Erie of passenger equipment as follows: 35, 70 ft. steel coaches with 6-wheel trucks, also alternate bids on cars with 4-wheel trucks; 2 steel dining cars, 72 ft. 6 in. long; 5, 70 ft. steel combination passenger and baggage cars; 10, 60 ft. 6 in. steel baggage cars also alternate bids on 70 ft. cars; 10, 50 ft. steel underframe milk cars and 10 steel passenger motor cars for subway service.

### Iron and Steel

THE SAN ANTONIO & ARANSAS PASS has ordered 768 tons structural steel from the Virginia Bridge & Iron Company.

THE GRAND TRUNK of Canada has placed an order, according to a report to the Department of Commerce from Consul General Gunsaulus, Halifax, for 25,000 tons of steel rails with the British Empire Steel Corporation, Sydney, N. S. This order, with others on hand, is said to insure the continuous operation of the Sydney works, employing 3,000 hands, all winter.

### Machinery and Tools

THE PENNSYLVANIA is inquiring for one 1,500-lb. steam hammer.

THE CORNWALL RAILROAD is inquiring for a 36-in. by 36-in. by 12-ft. planer.

THE BALTIMORE & OHIO is inquiring for 1 flue welding and swedging machine and 2 motor-driven centrifugal pumps.

THE CHESAPEAKE & OHIO is inquiring for the following machinery: 24-in. by 10-ft. lathe; 20-in. by 10-ft. lathe; 16-in. by 6-ft. lathe; spring forming machine; 1/4-in. rotary shear; 3-in. by 36-in. turret lathe; 48-in. upright heavy duty drill; power-driven hack saw; 4-in. pipe machine; 6-in. pipe machine, and a car roofing saw.

### Miscellaneous

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS is inquiring for approximately 15,000 barrels of Portland cement.

THE CHILEAN STATE RAILWAYS, 141 Broadway, New York, will receive bids until November 11 for some special tools for repairing Westinghouse air brakes, to include lathes, drills and planers, also for about 600 tons of steel plates for car repairing. Bids are also wanted on November 25 for 14,000 meters of 1 1/4 in. steel pipe for air brake equipment.

### Signaling

THE HALL SWITCH & SIGNAL COMPANY has received an order for 12 single unit, three color "searchlight" signals, 56 relays and 24 signal transformers for installation on English railways.



## Supply Trade News

**C. E. Naylor** has been appointed Texas sales agent of the **Lukens Steel Company**, Coatesville, Pa. Mr. Naylor's office is at 610 Carter building, Houston, Texas.

**The Black & Decker Manufacturing Company**, Baltimore, Md., has removed its branch office and service station from 318 North Broad street to 824 North Broad street, Philadelphia, Pa.

**The Carter Bloxonend Flooring Company**, Kansas City, Mo., has received a contract from the Baltimore & Ohio for the installation of 12,000 square feet of bloxonend flooring in a warehouse at Philadelphia.

**William Le Compte** has been appointed sales manager in charge of the New York territory for **Jenkins Bros.**, 80 White street, New York. Mr. Le Compte has been a member of the sales organization of this company for a quarter of a century.

**R. J. Platt**, sales representative of the **Sellers Manufacturing Company**, with headquarters at Chicago, has been promoted to assistant general sales agent, with office at the same place, succeeding **T. D. Crowley**, who has resigned to enter the service of the **Creepcheck Company**.

**T. D. Crowley**, assistant general sales agent of the **Sellers Manufacturing Company**, Chicago, has resigned to become general sales agent of the **Creepcheck Company**, which has



T. D. Crowley

opened general sales offices at 564 Peoples Gas building, Chicago. **J. T. Reagan**, western sales manager for the **Creepcheck Company**, has been promoted to service manager, with the same headquarters. Mr. Crowley was born at Clinton, Iowa, on August 18, 1884, and entered railway service in 1901 as a timekeeper in the track department of the Chicago & North Western. He was later assistant foreman and extra gang foreman in the same department and in 1907 was promoted to assistant roadmaster on the Wisconsin

division, with headquarters at Milwaukee. In 1909 he was appointed superintendent of materials in the general storekeeper's department at Chicago and subsequently was promoted to roadmaster, with headquarters at Sparta, Wis. In April, 1914, he went with the **Madden Company**, Chicago, as sales agent and continued with that firm until his appointment as assistant general sales agent of the **Sellers Manufacturing Company** in November, 1918, the position he held at the time of his recent appointment. Mr. Reagan was born on July 13, 1887, at St. Louis, Mo., and entered railway service in the transportation department of the **Grand Trunk** in 1907. In August, 1914, he entered the sales department of the **P. & M. Company**, Chicago, and in October, 1920, became associated with the **Creepcheck Company** as assistant general sales agent, the position he held at the time of his recent promotion.

**Paul A. Cuenot** has been appointed mechanical representative to furnish special tool service to customers of the **Alvord Reamer & Tool Company**, Millersburg, Pa. Mr. Cuenot was formerly connected with the **American Locomotive Company** and the **Pennsylvania Steel Company**.

**R. S. Gay**, formerly Chicago sales representative of **Beal Brothers** and the **Beal Tool Company**, and more recently plant manager of **Hubbard & Co.**, Montpelier, Ind., has been appointed a sales representative of the **Safety Car Heating & Lighting Company**, with headquarters at Chicago.

**Frederick B. Larsen** is now field representative for South Carolina, Georgia and Florida for the **Bryant Electric Company**, Bridgeport, Conn. Mr. Larsen's headquarters are at Atlanta, Ga. He was for three years manager of the **Hunter Electric Company** of Clearwater, Florida, and prior to 1919 he was for 12 years sales representative of the **Robbins & Meyers Company** in the South Atlantic states.

## Trade Publications

**EXPRESS REFRIGERATOR CARS AND TANK CARS.**—The Canadian Car & Foundry Company, Ltd., Montreal, has recently issued bulletins describing steel underframe express refrigerator cars built for the Canadian Pacific and allsteel tank cars of 8,000 gallons capacity built for the Russian Soviet Government. Another bulletin describes helical, semi-elliptic, and elliptic springs manufactured by this company.

**CENTRIFUGAL PUMPS.**—The Dayton-Dowd Company, Quincy, Ill., has issued bulletin No. 249 illustrating and describing its line of centrifugal pumps. This bulletin includes detailed specifications, efficiency and capacity tables and characteristic curves, as well as a description of the company's method of testing the pumps. The illustrations show the pumps in various combinations and installations.

**PACIFIC SOUTHWESTERN.**—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of a railroad from Lompoc to White Hills in Santa Barbara County, Calif., 4 miles.



Underwood & Underwood

A Relic of Old Days Put Into Working Order for Service in the Motion Pictures

## Railway Construction

**BALTIMORE & OHIO.**—This company has entered into a contract with the John S. Metcalf Company, of Chicago, specialists in grain elevator construction, for the preparation of plans and specifications for the new grain elevator facilities at Locust Point, Baltimore, Md., in replacement of the two old elevators destroyed by fire July 2 last. Tentative plans which have been worked out by the company and on which the architects will now prepare drawings, specifications, etc., call for a steel concrete elevator of the most modern type. The storage bins with capacity of 3,000,000 bu. will be so arranged that they can be readily increased to 8,000,000 bu. The plans include complete facilities for drying and cleaning grain, and provisions for unloading grain from boats. Safeguards against dust explosion will be used. The elevator will be constructed on the water's edge adjacent to piers, with galleries and belt conveyors reaching eight berths, four of which will be located on an exclusive grain loading pier, to be constructed for that purpose, the other four on a two-story merchandise pier already in use. Provision will be made so that the gallery system can be extended to other piers in the future. It is expected that the architects will have the detail plans in shape for submission to the railroad engineers within three months, after which invitations for bids on the construction work will be issued.

**BUFFALO CREEK & GAULEY.**—This company has awarded a contract to the Phoenix Bridge Company, Phoenixville, Pa., for six steel bridges.

**CHICAGO, BURLINGTON & QUINCY.**—This company has awarded a contract to Edgar Otto, Downers Grove, Ill., for the installation of a pumping plant, intake well, suction piping and intake piping for a reservoir at Galesburg, Ill.

**CHICAGO, MILWAUKEE & ST. PAUL.**—This company has been ordered by the Board of Railroad Commissioners of the State of South Dakota to construct a station at least 24 by 70 ft. at Draper, Jones county, S. D.

**CHICAGO UNION STATION.**—This company, reported in the *Railway Age* of October 14 as closing bids October 12 for the granite and stone work for the main building of the Union Station and for the construction of a signal tower, has awarded the former to George A. Fuller Company, Chicago, and the signal tower to R. C. Weibolt Construction Company, Chicago. This company, reported in the *Railway Age* of September 16 as closing bids September 18 for the excavation for permanent station tracks between Van Buren and Harrison streets, has awarded the contract to W. J. Newman Construction Company, Chicago. This company, also reported in the *Railway Age* of September 23 as receiving bids for the widening of Canal street, Chicago, from Harrison street, 225 ft. north, has awarded the contract to Paschen Brothers Company, Chicago.

**ILLINOIS CENTRAL.**—This company closed bids November 8 for a 100,000-gal. creosoted water tank at Herrin, Ill., to cost approximately \$15,000. This company will also construct two yard tracks 5,000 ft. long at Broadview, to cost \$22,000; two car repair tracks at Clinton, Ill., to cost \$16,000, and a wye track 3,000 ft. long at Blackford Ky., to cost \$13,000.

**MICHIGAN CENTRAL.**—This company, in conjunction with the Michigan State Highway Commission, will construct a two-span girder bridge, 118 ft. long, over its tracks at Leoni, Mich. The contract for the substructure, including 1,406 cu. yd. of concrete, 20,600 lb. of reinforcing steel and 1,040 ft. of vitrified tile, has been awarded to the Fargo Engineering Company, Jackson, Mich., and the contract for the steel superstructure to the McClintic-Marshall Company, Pittsburgh, Pa.

**SANTA FE & LOS ANGELES HARBOR.**—The Interstate Commerce Commission has issued a certificate authorizing this company to construct a new line from a connection with the Redondo branch of the Atchison, Topeka & Santa Fe near El Segundo to Wilmington in Los Angeles County, Calif., 12.54 miles.

## Railway Financial News

**CHICAGO & ALTON.**—*Stockholder Files Intervening Petition.*—The recently formed independent stockholders' committee of this company's leased lines announces that an intervening petition has been filed in the Federal District Court in Chicago against the Chicago & Alton and its receivers by the executors of the estate of William A. Slater, a large holder of the guaranteed preferred stock of the Kansas City, St. Louis & Chicago, on behalf of the minority stockholders of the road, for the restoration of \$598,912 alleged to have been wrongfully appropriated by the Chicago & Alton shortly before it went into receiver's hands. It is stated by the petitioners that this sum was the proceeds of the sale of terminal properties of the Kansas City road and was turned over to the Alton Company without consideration in return therefor.

*Deposit of Bonds Asked.*—The protective committee for the \$45,350,000 3 per cent refunding 50-year bonds, of which Charles A. Peabody, president of the Mutual Life Insurance Company of New York is chairman, has asked the holders of these bonds to deposit them on or before December 22 with the New York Trust Company, or with the Illinois Trust & Savings Bank, Chicago. The committee announced that it contemplated arranging to advance the amount of the October 1 interest to holders of the bonds who deposit their holdings of bonds with the committee.

**CHICAGO GREAT WESTERN.**—*New Directors.*—Charles G. Dawes and John A. Spoor have been elected directors to succeed Col. A. J. Sprague and Clyde M. Carr.

**CHICAGO, MILWAUKEE & ST. PAUL.**—*Asks Authority to Abandon Line.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its line from Gratiot, Wis., to Warren, Ill., 7 miles.

**MISSOURI, KANSAS & TEXAS.**—*Date of Sale.*—The sale of this road, postponed four times, has been set for November 29. The sale of the main line will be held at Colbert, Okla., at 10 a. m. and of the Texas lines at Denison at 3 p. m. the same day.

**NORFOLK & WESTERN.**—*Reduction in Dividend Rate on Equipment Trust Certificates Authorized.*—The Interstate Commerce Commission has issued a modification of its order of May 27 authorizing an issue of \$6,700,000 of equipment trust certificates so as to change the dividend rate from 5 per cent to 4½ per cent and the minimum price at which the certificates shall be sold from 97¾ per cent to 95½ per cent. The company represented to the commission that money conditions are such as to warrant the belief that certificates carrying the lower rate can be marketed on terms more favorable to it than the 5 per cent certificate. The certificates are to be offered for competitive bidding by the Virginia Holding Corporation.

**WESTERN MARYLAND.**—*Equipment Trust Certificates Authorized.*—The Interstate Commerce Commission has authorized this company to assume obligation and liability in respect of \$450,000 of equipment trust certificates to be issued by the Commercial Trust Company of Philadelphia and to be sold at not less than 97.25.

**WEST VIRGINIA NORTHERN.**—*Certificate for Acquisition Denied.*—The Interstate Commerce Commission has denied this company's application for a certificate authorizing the acquisition and operation of a branch line of track 5,612 ft. long extending from a connection with its railroad near Tunnelton, W. Va., to the coal mine of the Atlantic Coal & Coke Company. The branch line is owned by the coal and coke company. The commission says that the results of past operations have not justified the existence of the railroad from a transportation standpoint and in its opinion the matters of record do not justify the addition to capital account of the large sums proposed to be paid for the branch and a proposed extension.



### Treasury Payments to Railroads

Since last announcement, dated October 2, payments under Sections 204, 209, 210 and 212 of the Transportation Act, 1920, as amended, have been made by the Treasury as follows:

Section 204:	
Fulton Chain .....	\$3,881
Georgia Coast & Piedmont .....	23,127
Glenora & Western .....	10,917
Little Rock, Maumelle & Western, Receiver .....	24,434
Milltown Air Line .....	14,960
Neame, Carson & Southern .....	39,189
Northampton & Bath .....	121,911
Waterville Railway .....	9,671
Wyandotte Southern .....	10,389
Section 209:	
Charleston Terminal Company .....	10,352
Chesapeake Western .....	6,804
Lehigh & Hudson River .....	184,751
Middletown & Unionville .....	10,304
Oil Fields Short Line .....	11,588
Pacific Coast .....	2,343
Salina Northern, Receivers .....	14,086
Texas & Pacific, Receivers .....	298,042
Section 210:	
Cisco & Northeastern .....	27,862
Seaboard-Bay Line .....	1,100,000
Tennessee Central .....	937,000
Section 212:	
Chicago, Rock Island & Pacific .....	1,000,000
Seaboard Air Line .....	300,000
Total .....	\$4,161,611
Total payments to October 31, 1922:	
(a) Under Section 204, as amended by Section 212 for reimbursement of deficits during Federal Control:	
(1) Final payments, including partial payments previously made .....	3,847,665
(2) Partial payments to carriers as to which a certificate for final payment has not been received by the Treasury from the Interstate Commerce Commission .....	1,138,102
Total payments a/c reimbursement of deficits .....	4,985,767
(b) Under Section 209, as amended by Section 212 for guaranty in respect to railway operating income for first six months after Federal Control:	
(1) Final payments, including advances and partial payments previously made .....	109,356,189
(2) Advances to carriers as to which a certificate for final payments has not been received by the Treasury from the Interstate Commerce Commission .....	213,590,672
(3) Partial payments to carriers as to which a certificate for final payment has not been received, as stated above .....	126,947,222
Total payments account of said guaranty .....	449,894,083
(c) Under Section 210 for loans from the revolving fund of \$300,000,000 therein provided .....	
.....	317,886,667
Total .....	\$772,766,517

Repayments on loans under Section 210 have been made by 37 companies to the amount of \$98,323,511.

### Railroad Administration Settlements

The United States Railroad Administration reports the following final settlements, and has paid out or received from the several roads the following amounts:

Buffalo & Susquehanna Railroad Corporation .....	\$465,000
Norfolk Southern Railroad Company paid Director General .....	200,000
Morgantown & Kingwood Railroad Company paid Director General .....	75,000

### Tentative Valuations

The Interstate Commerce Commission has issued tentative valuation reports in which it states the final value of the property owned and used as follows:

	Owned	Used
Arizona & New Mexico, 1917 .....	\$4,223,928	\$4,223,932
Cumberland & Pennsylvania .....	4,269,273	4,269,523
Gulf & Ship Island, 1916 .....	9,034,850	9,036,302

The capitalization of the Cumberland & Pennsylvania as of valuation date was \$4,904,397 and that of the Gulf & Ship Island \$11,700,000.

### Dividends Declared

Cripple Creek Central.—Preferred, 1 per cent, quarterly, payable December 1 to holders of record November 15.  
Kansas City, St. Louis & Chicago.—Preferred, 1½ per cent, quarterly, payable November 1 to holders of record October 20.

### Trend of Railway Stock and Bond Prices

	Nov. 6	Last Week	Last Year
Average price of 20 representative railway stocks .....	70.31	69.50	56.01
Average price of 20 representative railway bonds .....	86.65	86.40	77.76

## Railway Officers

### Executive

**J. E. Duffy** has been elected president of the Port Huron & Detroit, succeeding T. L. Handy, deceased.

### Financial, Legal and Accounting

**George A. Kelly** has been appointed general solicitor of the Pullman Company with headquarters at Chicago, effective November 1.

**F. I. Gowen**, vice-president and general counsel of the Pennsylvania with headquarters at Philadelphia, Pa., has resigned these offices and has been appointed special counsel of the company. **C. B. Heiserman**, general counsel of the company with the same headquarters, will succeed Mr. Gowen. Both appointments are effective December 1.

**R. P. Jones**, assistant general auditor of the Seaboard Air Line, with headquarters at Portsmouth, Va., has been appointed assistant to vice-president-accounting, with headquarters at Baltimore. **L. L. Knight**, auditor disbursements, has succeeded Mr. Jones as assistant general auditor and **H. B. Anderson** has been appointed auditor disbursements.

### Operating

**B. C. Murphy** has been appointed chief dispatcher of the Florida East Coast, Northern division, with headquarters at New Smyrna, Fla.

**N. Johnson**, trainmaster of the Louisiana & Arkansas with headquarters at Minden, La., has been promoted to superintendent with headquarters at Stamps, Ark., succeeding R. L. Whitener, resigned.

### Traffic

**William B. Lanigan** has been appointed general freight traffic manager of the Canadian Pacific, with headquarters at Montreal. Mr. Lanigan was born on October 12, 1861, at



W. B. Lanigan

Three Rivers, Quebec. He was educated at St. Joseph's College, Three Rivers, and at Stanstead College. In July, 1877, he began railway work with the Quebec, Montreal, Ottawa & Occidental, now a part of the Canadian Pacific. He subsequently served as telegraph operator on the Grand Trunk until September, 1884, and later served in the same capacity on the Canadian Pacific. He was then agent at various places, and from July, 1891, to December, 1900, was traveling freight agent at Toronto. He later

served as assistant general freight agent at the same place, and subsequently became general freight agent, at Winnipeg, of the Western division. In March, 1908, he was appointed assistant freight traffic manager of the Western lines and in September, 1918, was advanced to freight traffic manager of the entire system, in which latter position he was serving at the time of his recent promotion.

**M. C. Browning**, general agent of the Louisville & Nashville, with headquarters at Cleveland, O., has been transferred

to Chicago, succeeding F. S. Griffin, promoted. **C. F. Stith**, commercial agent, with headquarters at Kansas City, Mo., has been promoted to general agent, with headquarters at Cleveland, succeeding Mr. Browning and will be succeeded by **M. P. Davis**.

**E. W. Soergel**, assistant general freight agent of the Chicago, Milwaukee & St. Paul with headquarters at Chicago, has been promoted to assistant to the traffic manager with the same headquarters. **J. A. Farmar**, chief of tariff bureau of the same road and **G. E. Stolp**, oriental freight agent with headquarters at Chicago, have been appointed assistant general freight agents with the same headquarters. **F. J. Calkins**, export and import agent with headquarters at Seattle, Wash., has been appointed assistant general freight agent with the same headquarters.

**F. P. Cruice**, whose promotion to assistant general freight agent in charge of solicitation of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal., was reported in the *Railway Age* of September 30 (page 633), was born in Michigan in December, 1874. He entered railway service with the Michigan Central in 1890. In 1898 he entered the employ of the Santa Fe, Prescott & Phoenix at Prescott, Ariz., as voucher clerk and operator in the general manager's office. In 1902 he was promoted to secretary to the president, which position he held until 1905, when he was promoted to chief clerk to the president. He was promoted to assistant to the president in 1908, and from 1910 to 1912, he was assistant to the president, secretary and treasurer and tax agent. Upon the merger of the Santa Fe, Phoenix & Prescott with the Atchison, Topeka & Santa Fe in 1912, he was appointed assistant general freight and passenger agent of the Santa Fe, Prescott & Phoenix lines, and in 1913, assistant general freight and passenger agent of the Coast lines at Prescott and later at Phoenix. In June, 1921, he was appointed assistant general freight agent of the Coast lines, with headquarters at San Francisco, Cal., and in September, 1921, manager of the agricultural and industrial development department, with headquarters at Topeka, Kan.

### Mechanical

**Alonzo G. Trumbull** has been appointed chief mechanical engineer of the Erie.

**W. R. Lane** has been appointed road foreman of engines of the Missouri division and **L. L. Lasswell** of the Illinois division of the Atchison, Topeka & Santa Fe, with headquarters at Shopton, Ia. **C. C. Reynolds** has been appointed district road foreman of engines of the Los Angeles division, with headquarters at Los Angeles, Cal. **P. J. Maloney** has been appointed road foreman of engines of the first district of the Albuquerque division, with headquarters at Albuquerque, N. M., and the jurisdiction of **W. Daze** will be confined to the second district of the Albuquerque division, with headquarters at Winslow, Ariz.

**F. A. Torrey**, general superintendent of motive power of the Chicago, Burlington & Quincy, with headquarters at Chicago, whose retirement was reported in the *Railway Age* of October 28, was born in Pennsylvania and when a boy served an apprenticeship in a machine shop. He entered railway service as a locomotive fireman on the Chicago, Burlington & Quincy at West Burlington, Ia., in March, 1874, and, until February 1, 1887, was a hostler and again a locomotive fireman and later a locomotive engineer. On the latter date he was promoted to road foreman of locomotives on the Ottumwa and Creston divisions, which position he held until April 1, 1889, when he was promoted to master mechanic, with headquarters at Ottumwa, Ia. He was transferred to Creston, Ia., on March 1, 1902, and on September 1, 1903, he was promoted to assistant superintendent of motive power, with headquarters at Chicago, which position he held until April 20, 1905, when he was promoted to superintendent of motive power, with the same headquarters. On January 1, 1911, he was promoted to general superintendent of motive power, with the same headquarters, from which position he retired on November 1 after 48 years of active service with the company.

### Engineering, Maintenance of Way and Signaling

**F. A. Russell**, formerly office engineer in the valuation department of the Missouri, Kansas & Texas, with headquarters at Parsons, Kan., has been appointed professor of railway engineering at the University of Kansas, succeeding **C. C. Williams**.

**F. M. Bisbee**, chief engineer of the Atchison, Topeka & Santa Fe, Western lines, with headquarters at Amarillo, Tex., whose retirement on November 1, was reported in the



F. M. Bisbee

*Railway Age* of October 21, was born on September 27, 1853, at Brunswick, Me., and received an education in civil engineering at the University of Maine. He entered railway service in 1878 as a transitman on the Atchison, Topeka & Santa Fe. Later he entered the employ of the Mexican Central as superintendent of construction and was soon promoted to resident engineer of maintenance. In 1883 he returned to the Atchison, Topeka & Santa Fe in charge of construction and in 1887 was with the Colo-

rado Midland for some months, after which he returned to the Atchison, Topeka & Santa Fe. In December, 1890, he was appointed roadmaster of the Gulf, Colorado & Santa Fe, with headquarters at Cleburne, Tex., and in October, 1892, he was employed by the Lake Shore & Michigan Southern, but soon returned to the Gulf, Colorado & Santa Fe, at Cleburne as superintendent of track, bridges and buildings. In August, 1896, he entered the service of the St. Louis & San Francisco as superintendent of track, bridges and buildings and three years later he became general and chief engineer of the Tennessee Central, which position he held until January, 1901, when he became general manager of the Los Angeles Land & Water Company. From 1903 to 1904, he was employed as an engineer by B. Lantry & Sons, railroad contractors, at Ft. Madison, Ia. In June, 1904, he returned to the Atchison, Topeka & Santa Fe as engineer of the Western lines, with headquarters at La Junta, Col. In May, 1913, he was promoted to chief engineer of the Western lines, with headquarters at Amarillo, Tex., which position he was holding at the time of his retirement.

### Purchasing and Stores

**Winfield S. Haines**, assistant to the vice-president of the Erie, has been appointed superintendent of reclamation service.

**J. E. Toms** has been appointed purchasing agent of the Tennessee Central, with headquarters at Nashville, Tenn., succeeding **E. H. Gaines**.

**J. L. Higgins** has been appointed purchasing agent and **C. F. Leatherman** storekeeper of the Kansas, Oklahoma & Gulf, both with headquarters at Muskogee, Okla.

### Obituary

**E. E. Kruthoffer**, auditor of freight accounts of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Cincinnati, Ohio, died on November 5.

**F. S. Gannon**, formerly president of the Norfolk Southern and, since 1909, president of the Montana, Wyoming & Southern, died at West New Brighton, Borough of Richmond, New York City, on November 8.